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DYSLEXIA AND ENGLISH AS A FOREIGN LANGUAGE:
A Study On Compositions in English Matriculation Examination Spring 1995

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Tutkielman tarkoituksena on selvittää lukemis- ja kirjoittamishäiriön eli dyslexian ilmeneminen englannin kielen opiskelussa lukiotasolla. Tutkimusmateriaalina on ollut 50 lukihäiriöisen ja 50 ei-lukihäiriöisen abiturientin englannin ylioppilaskokeen aineet keväältä 1995. Lähtökohtana tutkimukselle on lukihäiriöisten ja ei-lukihäiriöisten abiturienttien aineissa esiintyneiden virheiden, erityisesti oikeinkirjoitusvirheiden, vertaileva tutkimus. Virheet luokitellaan kahden eri virhetypologian mukaan. Tutkielmassa vastataan kysymyksiin: 1) Minkälaisia virheitä lukihäiriöisten ja ei-lukihäiriöisten oppilaiden englannin aineissa esiintyy? 2) Miten oikeinkirjoitusvirheet eroavat toisistaan lukihäiriöisten ja ei-lukihäiriöisten aineissa? 3) Onko erot oikeinkirjoitusvirheissä lukihäiriöisten ja ei-lukihäiriöisten oppilaiden välillä selitettävissä dysleksialla?

Tutkimuksessa on ensin jaettu aineissa esiintyvät erilaiset virhetyypit Mirja Tolsan virhekategorioiden (11 kategoriaa) mukaan eri ryhmiin. Ainoa kategoria, jossa lukihäiriöisten ja ei-lukihäiriöisten välillä oli selkeä määrällinen ero, oli oikeinkirjoitusvirheet, jotka on sitten jaettu Ruoppila, Röman ja Västin lukihäiriöisille tyypillisten virhetyyppien (16 eri tyyppiä) mukaisesti eri ryhmiin. Tutkimuksessa käy ilmi, että vertailtaessa lukihäiriöisten ja ei-lukihäiriöisten oppilaiden oikeinkirjoitusvirheitä laadullinen ero näiden kahden eri oppilasryhmän välillä näkyy selkeimmin virheiden jakautumisessa eri virhekategorioiden kesken. Ei-lukihäiriöisten oppilaiden oikeinkirjoitusvirheet keskittyvät viiteen eri virhekategoriaan, kun lukihäiriöisten virheet jakaantuvat tasaisemmin kaikkien kuudentoista oikeinkirjoitusvirhekategorian kesken. Huomion arvoista on myös se, että ei-lukihäiriöisten aineista ei löytynyt merkittävästi virheitä (0-1 virhettä/120) kuudessa virhekategoriassa, kun lukihäiriöisillä virheettömiä kategorioita ei ollut kuin kolme. Lukihäiriö näkyy selvästi lukioppilaiden aineissa virheiden jakaantumisena laaja-alaisemmin eri virhekategorioiden välille sekä oikeinkirjoitusvirheiden huomattavan suurella määrällä ei-lukihäiriösten aineisiin verrattaessa. Lukihäiriö myös selittää tiettyjen virhetyyppien esiintymisen.

Tutkielmassa selvitetään myös niitä ongelmia, joita lukihäiriöisillä oppilailla on englannin kielen opiskelussa. Tutkielmassa esitellään työtapoja, joilla opettaja voi helpottaa oppimisvaikeuksisen oppilaan kielen omaksumista ja opiskelua. Englannin kielen opetuksessa tulisi enemmän painottaa ääntämisen merkitystä ja kiinnittää erityistä huomioita sanan ja sanojen erilaiseen kirjoitus- ja ääntämisasuun. Näin oppilaiden kielikohtaista fonologista tietoisuutta lisätään ja heidän on helpompi löytää sanan niin oikea kirjoitusasu kuin ääntäminenkin.

Asiasanat: dyslexia, specific learning disability, phonological awareness, reading processes, writing processes, language processes in the brain, ESL and learning disabilities

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1 INTRODUCTION

Ever since we entered the every day working life of an English teacher in an evening school providing secondary and upper-secondary teaching we have come across with several pupils with learning disabilities. In the past few years we have been teaching English in Helsinki in an institution whose pupils mostly consist of adults. The motivation of these pupils to learn new things has usually been very high since the decision to study in the evenings has been their voluntary choice.

However, no matter how diligent and hard-working these pupils have been, the result of their endeavours has not been satisfactory compared to the time and effort they have seemed to have spent on the subject. Are they simply not interested in the English language and therefore neglect their studies? Or are they perhaps not linguistically gifted and find other subjects more interesting? Or is their production weak for some other reason? In some cases it has soon become evident that these pupils are underachievers because they suffer from a specific learning disability, dyslexia. In many cases that is probably the underlying reason why they have not been able to or have not had enough courage to finish their upper-secondary schooling in their teens and have decided to finish their education in their mature years.

In autumn 1994 our school, Käpylän iltaoppikoulu, started special tailored teaching groups aimed for dyslexics after a suggestion by a group of adult students who had failed to complete their studies in the past. The group consisted of persons who felt dyslexia was the main reason for this. The teachers in our school were provided with background information on dyslexia and that triggered our interest in the matter. We realised that many pupils that we had met with in our

upper-secondary English classes were in fact pupils with dyslexia and often hard-working underachievers.

We wanted to get more information on the subject of dyslexia and foreign language learning, since the subjects in school that cause most problems for dyslexics besides first language learning are foreign languages and mathematics.

Having completed our teacher's training programme in the late 80´s and early 90´s we were not as well prepared to face pupils with special needs or learning disabilities as we should have been. It was a surprise to acknowledge the number of pupils who would, in fact, require special attention and tailored teaching methods. We felt as if we were trotting on thin ice when grading our pupils´ proficiency of English and even after years of co-operation with dyslexic pupils we still feel insecure and inadequate in meeting the needs of such pupils. In a way, our motive for this thesis has been somewhat selfish, since we have tried to diminish the insecurity in ourselves by finding out as much as possible about dyslexia. Our personal aim has been to learn about the deficit and learn to detect possible dyslexia in our foreign language learners.

The background information for our empirical study will deal with historical facts about dyslexia and the research that has been made on it. The reasons for dyslexia will also be introduced. We will discuss the problems a dyslexic student may have learning a second language. Special attention will be paid on the difficulties the dyslexic pupils have with the English language. Since the basic skills of reading and writing are essential for learning in school and they are the areas where the problems of most dyslexic students derive from, we felt it important to be able to understand these processes and the deficits that take place there. Poor reading and writing in the first language reflect on the second language learning. That is why we take a look at the learning processes of reading and writing. We need to know what is happening in the learning process in order to understand learning difficulties better and perhaps find alternative ways to study for students with

problems. When we know how a person learns or does not learn to read and write, we should be able to understand the problems of our dyslexic students better and to accommodate our teaching so that it would be as comfortable for all the students, dyslexic or non-dyslexic, to follow.

Most of our pupils study on the upper-secondary level where the Matriculation Examination lies as a hidden curriculum, that is, both the teachers and the students think about the Matriculation Examinations all through their studies and in the end aim at the best possible results. We gathered our research material from the Matriculation Examination Board, because we knew they would have the required certificates for each student diagnosed with dyslexia and we would also be able to gather material for a comparison group. All the students in our study have taken the same examination. They have had the same amount of courses and they have had to complete their courses successfully in order to have been allowed to take the examinations. So their background was as similar as could be.

We wanted to see how apparent dyslexia was on the Matriculation Examination level in the production of dyslexic students. In order to see if dyslexia was indeed evident we needed to compare the production of dyslexic students with so-called normal students. Therefore we also needed similar papers for a non-dyslexic comparison group. The Matriculation Examination consists of four different parts, that is, Listening Comprehension, Reading Comprehension, Structure and Composition (see Appendix 3). We will only concentrate on the composition part. The reason for this is that the student's own production will most clearly reveal her/his knowledge of grammar, vocabulary and spelling. We felt that the other parts of the Examination did not provide us with valid material since they were either multiple choice questions or open questions based on the text.

We analysed every error in all the compositions by two categorisations, Mirja Tolsa's different types of mistakes (see Appendix 4) and Ruoppila, Röman and Västi's (1969) list of typical dyslexic spelling mistakes. After categorising the

errors made by the dyslexics, we compared them to the errors made by the non-dyslexic group, which had also been analysed and categorised in the same way. This was done in order to see if there were differences in the quality and quantity of the errors made by the two groups.

Different kinds of dyslexic pupils need different kinds of teaching. Fortunately, there are various assisting methods and ways of teaching but the teacher just has to be aware of them and has to take the effort to use them. We will be introducing some methods and ways later on (see Chapter 4.2 How to help a dyslexic student in foreign language learning). Special attention will be paid to the difficulties the dyslexic pupils have with foreign languages, in this case with the English language.

2. DYSLEXIA AS A SPECIFIC LEARNING DISABILITY

The definition of dyslexia has been developed and adjusted over the years along with the growing interest and research on the subject. It is interesting to see that the symptoms of dyslexia were already recognised in the late 19th century, but only in the past few decades the new technology has enabled scientists to find the actual causes for the deficit. In the following chapters we will review the development of the research made on dyslexia and introduce the causal factors of dyslexia. We will also describe the characteristics of dyslexic reading and writing.

2.1 Historical background

The term dyslexia was first introduced in 1887 by German ophthalmologist Berlin. The word originates from Latin and Greek, `dys´ + `legere´ or `lexis´ and refers to

difficulties in reading and speaking. He coined the word to describe patients who had severe reading difficulties because of cerebral disease. Berlin used the term to refer to a condition which was acquired and like his contemporaries (see Broadbent 1872 and Kussmaul 1877) considered dyslexia a type of aphasia, for example, a partial or total loss of communicative ability either in speech or writing caused by a disorder of the central nervous system. (Richardson 1992: 40-41.)

In 1896 an English physician, Pringle Morgan, published his classic case study of a 14-year-old boy who suffered from congenital word blindness. Morgan's description of the learning disorder would later be known as developmental dyslexia. He was the first one to report on reading and writing difficulties on an otherwise normal child. He wrote in *British Medical Journal* that "Percy ... has always been a bright and intelligent boy, quick at games, and in no way inferior to others of his age. His great difficulty has been—and is now—his inability to learn to read." (Morgan as cited in Shaywitz 1996.) According to Morgan the reason for word blindness was found in the defective development of the left angular gyrus in the brain. Also Hinshelwood (1917) and Orton (1925) contributed to the fact that congenital word blindness was recognised as a clinical entity. (Richardson 1992: 40-42.) Orton (1925) found out that dyslexics had specific difficulties with printed symbols, especially with reversible letters and words e.g. `b'/`d, `p'/`q', `was'/`saw' which indicated a visual perceptual problem (Snowling 1987: 16). Orton (1937) also came to the conclusion that it was a question of a cluster of syndromes which caused the delay or disorder in the language acquisition. He named developmental word blindness, developmental word deafness, special difficulty in writing e.g. dysgraphia, motor speech delay and finally stuttering. All these attributed to dyslexia. He also recommended training in the establishment of phoneme-grapheme associations and the appropriate sequencing of written and auditory symbols. He also emphasised the use of all senses to reinforce weak memory patterns. (Richardson 1992: 42.) Thus, Orton can be claimed one the most significant pioneers and an ancestor of the modern understanding and treatment of dyslexia.

By the mid-20th century the term word blindness was rejected because of its misleading character. Instead the terms specific congenital or developmental reading disability or dyslexia were in fashion. The term developmental, in relation to dyslexia, refers to the fact that dyslexia is innate and not caused by some later incident. Later the term specific learning disability was coined to make the distinction between general learning disabilities and specific learning disabilities. General learning disabilities are caused by handicap, severe socio-emotional disturbances and impairments in sensory acuity which all affect and lower the general learning ability. Dyslexia as one form of specific learning disabilities mainly affects a person's ability to learn to read and write but can manifest itself in various areas of learning including mathematics and handwriting. In German-speaking countries the term legasthenie or the abbreviation LRS (Lese- und Rechtschreibescwäche) are in use. (Ahvenainen 1980:2-4.)

2.2 Dyslexia defined

Dyslexia is a specific learning disability. It covers various problems in learning to read and write but may also reveal itself in other areas of learning such as mathematics. Due to different branches of science the definition of dyslexia has been imprecise. Researchers in different fields of inquiry, in psychology, linguistics, education and various disciplines of medicine have all shown interest in dyslexia from different perspectives. The medical approach emphasises the etiology of the symptoms whereas the differences at the level of performance, like the number and quality of mistakes, are examined in the psychological-pedagogic approach.

When defining dyslexia the researchers today agree upon the deficits in language processing, memory delimitations and the hereditary nature of dyslexia as well as the fact that dyslexics possess at least average intelligence. There are also studies

that show that boys are more often diagnosed as dyslexics compared to girls, the sex ratio being four (4) to one (1). (Syvälahti 1975: 21-22, Korhonen 1995: 168, Höien and Lundberg 1992: 19.)

As noted earlier, dyslexia was first viewed as a type of aphasia. It was in 1968 when the World Federation of Neurology proposed a definition according to which a dyslexic person has great difficulties learning to read even though s/he possesses adequate intelligence and receives conventional instruction. S/he is not deprived from sociocultural opportunities, either. The reason for her/his difficulties, e.g. dyslexia, lies in "fundamental cognitive disabilities" which are often inborn. (Thomson 1984:10.)

A definition by the World Federation of Neurology (1968) does not, however, tell very much about the characteristics of the disorder. The only actual characteristic is the difficulty learning to read; otherwise the definition is exclusionary describing what the disorder is not rather than what it is. Such an exclusionary definition does not give any tools for early identification of the deficit. Ever since the publication of the above-cited definition the research has concentrated on "fundamental cognitive disabilities" trying to delimit the dyslexia specific abilities and disabilities.

Wheeler and Wheeler (as cited in Thomson 1984:12) defined dyslexia in more details describing the main cognitive difficulty as " . . . a wider limitation in processing all forms of information in short-term memory, be they visually or auditorally presented." The processing limitation is found in reading and particularly in spelling which both require the use and access to short -term memory. Wheeler and Wheeler's definition gives useful information on the specific disabilities that a dyslexic suffers from which helps the early identification and detection of the deficit and moreover it helps in finding assistive teaching methods.

In recent studies attention has been paid on the specification of the nature of language and especially processing impairments. Kamhi together with Catts (Kamhi 1992: 50) view dyslexia as follows:

> Dyslexia is a developmental language disorder whose defining characteristic is a life-long difficulty processing phonological information. This difficulty involves encoding, retrieving, and using phonological codes in memory as well as deficits in phonological awareness and speech production. The disorder, which is often genetically transmitted, is generally present at birth and persists throughout the lifespan. A prominent characteristic of the disorder is spoken and written language deficiencies.

Catts and Kamhi´s (1992) definition gives very specific information about the processing limitations of dyslexics. They agree upon the informational processing deficiencies in dyslexia and emphasise the importance of memory. Long-term memory is vital in the encoding of speech-sound information and the retrieval of phonological information whereas short-term memory, also known as working memory is the place where the use of phonological codes takes place (Kamhi 1992:50).

Finally we would like to cite the revised definition of dyslexia given by the International Dyslexia Association [http://www.dys-add.com/define.html]. Its definition of dyslexia is compatible with the previously quoted definitions by Wheeler and Wheeler as well as Catts and Kamhi and describes dyslexia as "difficulties in receptive and expressing language, including phonological processing, in reading, writing, spelling, handwriting, and sometimes in arithmetic." It, however, omits the significance of memory and defines dyslexia as "a neurologically -based . . . disorder" which is not . . . "a result of lack of motivation, sensory impairment, inadequate instructional or environmental opportunities, or other limiting conditions, but may occur together with these conditions".

The definition by the International Dyslexia Association is a wider one compared to the definitions quoted above. Primarily the reason for dyslexia is found in the malfunction of the central nervous system that can affect various areas of learning, not only reading and writing. It emphasises that problems which are connected with senses, sociability and emotions are not primarily caused by dyslexia but can be side effects.

The deficits in language processing affect a dyslexic in the way that s/he has difficulties to learn the relationship between letters and the sounds they represent in words. The lack of phonemic awareness also causes difficulties in applying letter/sound correspondences to sound out unknown words. All unknown words need to be tasted, sounded out in order to find out the correspondence between the grapheme and the phoneme, the smallest unit of the spoken language.

Memory defects are widely acknowledged in dyslexia. The short-term memory is the most essential when a child is learning to separate and unite phonemes, building up words from syllables and memorising words and syllables during the reading and writing process. With the help of the short-term memory a child is able to restore visual and auditory information, analyse and revise it into such a form that it can be restored in the long-term memory. However, the capacity of the short-term memory is limited to five to eight units that can be restored for twenty to thirty seconds. Therefore, if the phonological analysis of a word is slow and cumbersome, the memory gets overloaded and is exceeded and the already perceived syllables in the beginning of the word are forgotten and the analysis of the word is unsuccessful. (Ahvenainen-Karppi 1993: 51-52.)

The long-term memory contains three submemories where different kinds of information structures are restored. Knowledge is restored in semantic memory, experience in episodic memory and finally motor activities in kinaesthetic memory. Nowadays the slips of memory are regarded more as problems in detecting the information than restoring it. Even though the short-term memory

has more central role in learning, reading comprehensions and composition arrangements base themselves on information structures in long-term memory. (Ahvenainen and Karppi 1993:53.)

Based on his studies Brady (1991) claims that dyslexia has more to do with phonological coding deficits than short-term memory delimitations. According to him only 10 % of dyslexia cases can be explained by short-term memory and emphasises the importance of phonological awareness. (see Lehto and Helander 1996.)

2.3 Causal factors of dyslexia

The precise reasons for dyslexia have been uncertain for a long time and, naturally, a great deal of study needs to be done on this field since there are different kinds of dyslexics with different kinds of problems. Scientists are still trying to determine which areas of the brain are the most involved and how the different areas relate to each other and how they contribute to the varieties and degrees of the disability. They do agree that different kinds of dyslexias derive from dysfunctions in different parts of the brain. The deficit has been linked to speech sound processing, vision and language brain system. Most studies have now focused on the left hemisphere of the brain in areas that are known to be used in language processing.

Geschwind and Levitsky (1968) conducted a research on the brains of a hundred randomly chosen people. They found out that dyslexics had a remarkable difference in their brains compared to the others: their planum temporalises were symmetrical in size. In two thirds of normal non-dyslexic people the left planum temporalis is larger than the right. Later on other researchers have come across the same result of a uniform absence of left-right asymmetry in the language area of the brain (see Galaburda and Kemper 1979). Larsen et al. (1990) examined living

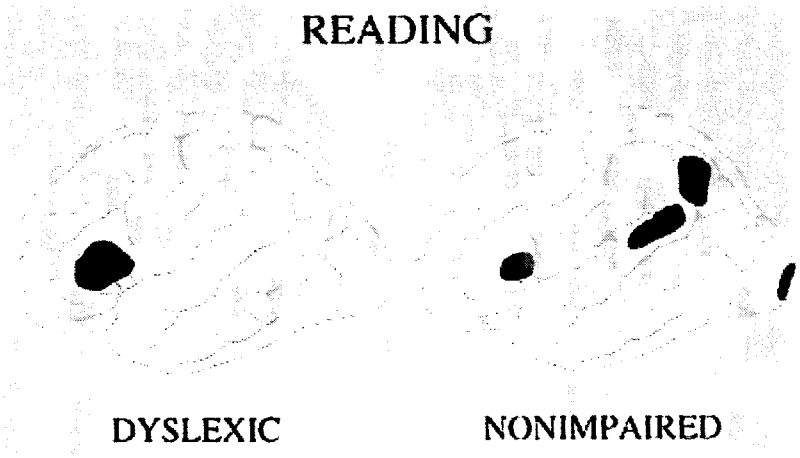
brains in rest with MGI (Magnetic Resonance Imaging). They found out that 70 % of the 19 dyslexics had a symmetrical planum temporalis, when the comparative figure in the comparison group was only 30 %. The great interest in the symmetry of the brain hemispheres can be explained by the function of the planum temporalis, phonological serial processing, which in most studies today has been acknowledged to be the primary cause for many types of dyslexia.

Salmelin et al. (1996) has reported a visual word processing research conducted on adults (six dyslexics and eight controls) in Finland. The subjects were shown words and the activity of their cortex was simultaneously measured with magnetoencephalography (MEG-device). The study showed that dyslexics have inadequate activity in the primary visual area of the left occipital lobe, which reflects deficiency in the rapid recognition of the visual form of the word. The activity in the left temporal lobe was also found to be low which most likely shows deficiency in the phonological processing of the word. However, they have unexpected activity in Broca's area, which is usually connected only with the production of speech. The study shows that the slow speed of reading could be a result of inadequate ability of the cortex to react to the visual form of a word. Dyslexics do not seem to have the brain cells that specifically become active in the phonological process, which may hamper the connection between the spoken word and its written equivalent which in turn is crucial for the rapid recognition of the word needed in learning to read. (Salmelin et al. 1996.)

In addition to magnetoencephalography other technical devices used nowadays for studying brains are e.g. BEAM-technique (Brain Electrical Activity Mapping) and PET-scan (Positron Emission Tomography). The great advantage of BEAM-technique is that it shows that reading processes are located in different parts of the brain and it will show 96 % of the dyslexias It can also help to categorise dyslexics into different subgroups according to their primary difficulty. (see Duffy et al. 1980a, Duffy et al. 1980b.) The PET-scan is used to study the biochemical reactions in brain regions in a person who is alert and awake as s/he performs a

specific cognitive task. PET-scan showed that there are differences between dyslexics and normal readers in the metabolic activity in various brain regions. (see Gross-Glenn et al. 1990.)

Picture 1. Imaging techniques reveal that different areas of the brain are active (shown in red) in impaired and dyslexic readers. [http://jama.ama-assn.org/issues/v279n15/ffull/jha80002-3.html.]



A group of researchers, lead by Sally E. Shaywitz, have been using a high-tech brain-mapping procedure called functional magnetic resonance imaging (fMRI) in order to monitor brain activity in their 61 subjects. The fMRI provides a very fine resolution of the brain and also shows in which parts there is activity at a given time. According to Shaywitz's team, dyslexics show very little or no activity in the rear-areas of the brain, including the angular gyrus and Wernicke's area like the group of non-dyslexics, but instead they seem to compensate by overusing the frontal area, Broca's area (see Picture 1), which is traditionally associated with aspects of language processing and speech. [http://www.washingtonpost.com/wp-srv/frompost/march98/dyslexia3.htm.]

In Finland the research on dyslexia is mostly situated at Niilo Mäki Institute in Jyväskylä. One of their present studies is conducted on a hundred children with hereditary dyslexia risk and a comparison group of the same size. The children have been tested for the first time the day after their birth and the testing will continue until they reach their teens. One of the purposes of this study is to determine the relationship between earlier language development and later problems at learning to read and to develop and try out methods to assist children with language problems. (Lyytinen et al 1996; Lyytinen 1999.) According to Ulla Richardson (1998), dyslexic babies have difficulties in speech perception as well as in speech production which are due to the disorder of the nerve system especially in the area of temporal lobe or frontal lobe.

2.3.1 Balance model of cerebral hemispheres by D. J. Bakker

D. J. Bakker (1976, 1987, 1990 and 1992) has presented his own theory of learning to read, the Balance Model, in which he connects the process of reading to the functions of cerebral hemispheres. The Balance Model is based on the fact that both left and right cerebral hemispheres have their own specific roles in the process of learning. The difference between the two types is the dominant hemisphere. Based on his theory on reading, Bakker has divided dyslexics into two categories of P- and L-types.

During initial reading the right cerebral hemisphere is dominant, since the child is learning a new, strange code system on which syllables and words are based. Letters are completely new and unexpected symbols that do not follow the rules of constancy. They do not retain their meaning when moved around e.g. `b′ becomes `p′ or `d′ when turned around. Quite a few letters behave this way. Still `D′ has the same meaning as `d′. These changes and problems are only on the letter-level, but the same happens in words and sentences. If the letters are moved around in a word e.g. `mean′, `name′, `mane′, `amen′ or words in a sentence e.g. `He is at

home.', 'Is he at home?', 'At home he is!' the meaning usually changes completely. But the words 'mean', 'MEAN', 'MeAn' will have the same meaning. So initially reading is slow and fragmented and analysing these perceptual and directional text features primarily evokes right-hemispheric processing. This phase normally lasts about two years after which, along with the automatisation of literacy, that is, during the learning to read process, neurological analysis transfers itself to the left cerebral hemisphere, where it is possible to concentrate on syntactic-semantic processing. (Bakker 1992.)

The P-types represent dyslexics whose right hemisphere is predominant, that is the shift from the right to the left hemisphere have not occurred. The right hemispheric predominance results in moderately slow and fragmented style of reading. The P-dyslexic repeats and corrects her/his reading as well as makes a considerable number of hesitative pauses, since her/his phonetic analysis is weak. S/he has trouble recognising and segmenting separate elements in a word. S/he sees a word like a graphic figure. This style of reading is typical of a beginner. (see Bakker 1976, 1987, 1990, 1992.)

The L-type dyslexic in turn has moved too soon from the right to the left hemisphere. This causes impulsive, hasty and inaccurate reading. S/he omits, substitutes, adds and guesses letters and words. Since there is actually suppression of the right-hemispheric strategies the reader will disregard the perceptual features of the text and thus induce substantive errors. The dominant feature in her/his reading is the phonetic segmentation, therefore s/hehas problems in comprehending the text as a whole. (Bakker 1976,1987,1990 and 1992.)

2.4 Dyslexia recognised

Dyslexia is a highly inherent disorder which parents should be aware of and, thus, be able to recognise certain warning signs of possible learning impediments as

early as possible. Lyytinen (1999:213) states that scarce babbling with hardly any consonants, very little amount of communicative gestures, problems in understanding speech, problems in intelligence and memorising and the lack of symbolic play are all early signs of possible linguistic problems.

The first symptoms of a child being a dyslexic are usually noticed at school. Teachers, by comparing children's work and behaviour can soon point out those pupils who have difficulties in reading and writing. On the other hand, it is often the parents who realise that their child is having problems in other areas of development which can all be caused by dyslexia. The child, for instance, may lack self-control and is unable to concentrate on the task at hand. S/he loses many personal items and forgets her/his books either at home or at school. S/he may have difficulties to do things in the right order or s/he cannot tell right from left. S/he is confused over geographic directionality; north, south, east versus west. S/he has difficulties learning or remembering such directionality words as over-under, up-down, forward-backward. Tying shoelaces can be an impossible task. The child also lacks dominant handedness and tends to switch hands between tasks even when s/he is in the middle of doing something. (Selikowitz 1993: 13.)

Speech delay is also one of the clues that may signify dyslexia. The child has difficulties in expressing her-/himself or even in understanding language. Her/his own speech may be immature and indistinct. Complex instructions may be confusing for her/him and stories that are targeted for her/his age group can be difficult to understand. (Selikowitz 1993: 13.)

Dyslexia may also reveal itself in a child's behaviour. It is not at all unusual that a dyslexic child has difficulties in social relationships. S/he may have difficulties in making friends with her/his peers and becomes rejected and withdrawn. S/he refuses to go to school and plays truant. S/he has problems to concentrate and is restless and disturbs teaching. S/he may even become aggressive and defiant. All these behaviours can be a result of difficulties in school work that again causes

poor self- esteem. It is very important that a child is not punished for being naughty but that the real problem is detected. (Selikowitz 1993: 13.)

2.5 Characteristics of dyslexic reading and writing

The most obvious indicators of possible dyslexia are mistakes in writing and reading. The mistakes dyslexics make are similar to the mistakes children learning to read and write make on the whole but it is the unusually high number of mistakes that reveals the deficit. It also takes a lot more time and effort to attain a basic level of competence.

2.5.1 Dyslexic reading

Ahvenainen and Karppi (1993:74-83) list out problems that dyslexics are prone to make when learning to read and write. The stumbling blocks for dyslexic pupils concerning the basic technique of reading are finding the phoneme-grapheme correspondence, perceiving syllables, combining phoneme-grapheme correspondence into syllables, forming words from syllables and understanding words and sentences. Therefore a dyslexic child's reading is very slow. S/he reads in a choppy cadence ignoring punctuation and becomes very tired after reading only for a short time. S/he spends a lot of energy and time trying to read single words which leads to low reading comprehension. Since the reading is laborious already on the single word level, short-term memory gets overloaded and fails when the child is trying to read long words. This leads to guessing. The inability to spell already familiar words indicates problems in retrieving already restored phonological information from long-term memory. It is also very common that the child does not follow the lines but simply ignores a line or a word or two every now and then. (Mikkilä 1985:34-35, Salminen 1982: 18.)

On the single word level, the child often flips a letter horizontally along a vertical axis as in *ded* for `bed´ or upside down as in words *may* for `way´ or *we* for `me´ or in Finnish *sanden* for `sangen´ (rotations). S/he may also switch the order of the adjacent letters as in *on* for `no´, *gril* for `girl´ , *own* for `won´ or in Finnish *meis* for `mies´ or *regnas* for `rengas´ (reversals). Syllables and suffixes are also frequently left out or changed or unnecessarily added so that `needed´ becomes *need*, `talking´ *talks* and `lately´ *late*. S/he also substitutes similar-looking words even though their meaning is completely different. S/he may, for instance, read *sunrise* for `surprise´ or *house* for `horse´. (Mikkilä 1985: 34-35, Salminen 1982: 18.)

It is no wonder that reading for a dyslexic child is not a very pleasant thing to do. If s/he does not understand what s/he is reading there is no point in doing it. Very often the child simply makes a story of her/his own, based on pictures and illustrations on the pages. And this way covers her/his difficulties. The reading problems among upper secondary students are in some cases still present, especially in English. The fact that the words are pronounced in a different way as they are written in English is a very difficult concept for dyslexics. The grapheme -phoneme correspondence they have learnt and may still have problems with in Finnish is no longer valid. They need to learn a completely new phonemic system that is completely different from the Finnish system.

2.5.2 Dyslexic writing

A dyslexic child's handwriting can in some cases be nearly illegible caused by a visual-motor integration problem, dysgraphia. Writing is slow and a laboured task. Even holding a pencil correctly is hard work. The letters do not follow the horizontal lines on the paper and they are written with unusual starting and ending points. The spatial organisation of a page is also very unusual, often without

margins. It also takes time to master cursive writing. (Salminen 1982: 39.), [http://www.dys-add.com/symptoms.html.]

When writing the trouble lies in the segmentation of words into syllables and detecting graphemes for the equivalent phonemes (Ahvenainen and Karppi 1993: 74-83). The actual errors a dyslexic child makes in writing are very similar to reading. S/he reverses, inverts and transposes letters as in words *gril* for `girl′ or *wareing* for `wearing′. The letters which are very often confused with each other and misspelt are letter pairs `m′/`w′ and `p′/`d′/`b′/`g. The consonant cluster pairs `ts′/`st′, `ks′/`sk′ and a diphthong `ei′/`ie′ are often reversed so that the Finnish word `liesi′ becomes *leisi* or `suksi′ becomes *suski.* Reversals happen also on a word level as in Finnish words *lapa* for `pala′or *litu* for `tuli′. Words have also either too many or few letters or syllables. For Finnish dyslexics it is very typical to leave out the other vowel or consonant from the long vowel sound and gemination as in English words *soner* for `sooner`, *presure* for `pressure′. The `ng′ sound is also very often misspelt so that the Finnish word `lanka′ may be spelt as *lankga* or the English -`ing′-ending as in word `learning′ becomes *learnig.* Letters may also be misspelt either because they look or sound the same or the place or the way they are pronounced are close to each other. Compounds are often misspelt e.g. *enemymovements* for `enemy movements′. The confusion between capital and small letters cause spelling mistakes as well as punctuation and the omission of distinctive marks of such letters as `t′ and `ä′ so that they become *l* and *a.* For some Finnish dyslexics punctuation in English is especially difficult because of the frequent use of hyphen. (Mikkilä 1985: 32-34, Salminen 1982: 18.)

Another characteristic of dyslexic writing is that the text either contains words that are semantically wrong or lacks words that are essential for the comprehension. On the whole written productions, depending on the severity of dyslexia are full of erasures and crossouts that indicate spelling uncertainty. Sentences tend to be short and display weakness also in the use of grammar and sentence structure. (Salminen 1982: 18.)

According to Johnson and Myklebust cited in Miles (1991: 195-202), the mistakes dyslexics make tell whether they suffer from either visual or auditory dyslexia. They list reversals, inversions and transpositions as typical mistakes of visual dyslexia. They also mention that visually dyslexic persons fail to notice internal details in words so that words like `ship′ and `snip′ or `beg′ and `bog′ are confused and that their rate of perception is slow. The auditory dyslexics show weakness in auditory discrimination and phonetic analysis and therefore fail to hear similarities in initial or final sounds of words or double consonant sounds. They find it difficult to discriminate short vowel sounds and recognise rhymes. They do not remember the sound of a letter or rhythmic patterns and cannot say a word even though they know the meaning. All these tasks involve auditory memory, sequence and discrimination in which auditory dyslexics are inferior. However, Miles (as cited in Snowling and Thomson 1996:201) finds it artificial to make a distinction between visual and auditory dyslexia since many visual errors can be detected as linguistic deficiencies which "prevent the mastery of the alphabetic code, its symbols and its relationship to the oral language on which it is based." Miles claims that even when the stimulus is of visual origin it may be represented in a phonological form in short-term memory. In other words, both the visual and auditory dyslexia can be explained by the same deficiencies in phonological language processing. Nowadays the division between visual and auditory dyslexia is no longer considered as important since the underlying problem in both cases of dyslexia is the same.

Ruoppila, Röman and Västi (1969) have collected a list of writing mistakes typical to dyslexics in Finland. This list is similar to the error classification by Mikkilä (1985) and Salminen (1982). The error categorisation by Ruoppila, Röman and Västi (see Table 1) is still used as the basis when diagnosing possible dyslexia. The mistakes are found and given certain norms on which the seriousness of dyslexia is based. This kind of phenomenologically descriptive diagnosis is only based on error analysis and aims at assessive and corrective teaching. The

mistakes are classified according to their quality and number. The etiology of possible dyslexia remains unsolved. (Salminen 1982: 16-17.)

Table 1. Dyslexic mistake categories by Ruoppila, Röman and Västi (1969).

1. capital or small initial letter
2. reversal or rotation
3. missing letter in gemination
4. missing letter in long vowels
5. missing letter
6. m/n confusion
7. ng-sound mistake
8. wrong letter
9. mistakes in compounds
10. mistakes in punctuation
11. missing word
12. wrong but suitable word
13. wrong word ending
14. non-word
15. missing syllable
16. additional letter and other mistakes

In our analysis of the spelling mistakes in students' compositions we will be using the categorisation of dyslexic mistakes by Ruoppila, Röman and Västi (1969) as a basis for typical dyslexic features when comparing the spelling mistakes of the dyslexic students and the non-dyslexic students in their compositions. Prior to this we have categorised all the mistakes found in the compositions according to the mistake list by Mirja Tolsa (see Chapter 5: Purpose and data; also Appendix 4).

Dyslexia is a lifelong burden. The phonological processing deficit which underlies the disorder never goes away. This means that even as adults, individuals will experience problems in spoken and written language and will have selected phonological processing difficulties such as repetition of phonologically complex words and phrases (Catts 1989) despite the fact that they have developed fairly good reading skills and have learnt to compensate their deficit in different ways.

They continue to have problems with directionality, time concepts and management. They do not easily memorise facts that are personally uninteresting and irrelevant. Nevertheless, many dyslexics have found their strengths in other areas of life. They are very often artistically skilled, musically talented or gifted athletes.

3 READING AND WRITING PROCESSES

The basic skills of reading and writing are essential for learning in school and they are the areas where the problems of most dyslexic students derive from. It is important to be able to understand the reading and writing processes and the deficits that take place there. First we will introduce the neurological approach to these processes and then, secondly, we will take a look the 'two-route model' which is a more cognitive and linguistic approach to the subject. Finally we will introduce the 'top-down' and 'bottom-up' -processes which deal with contextual information and the analysis of print.

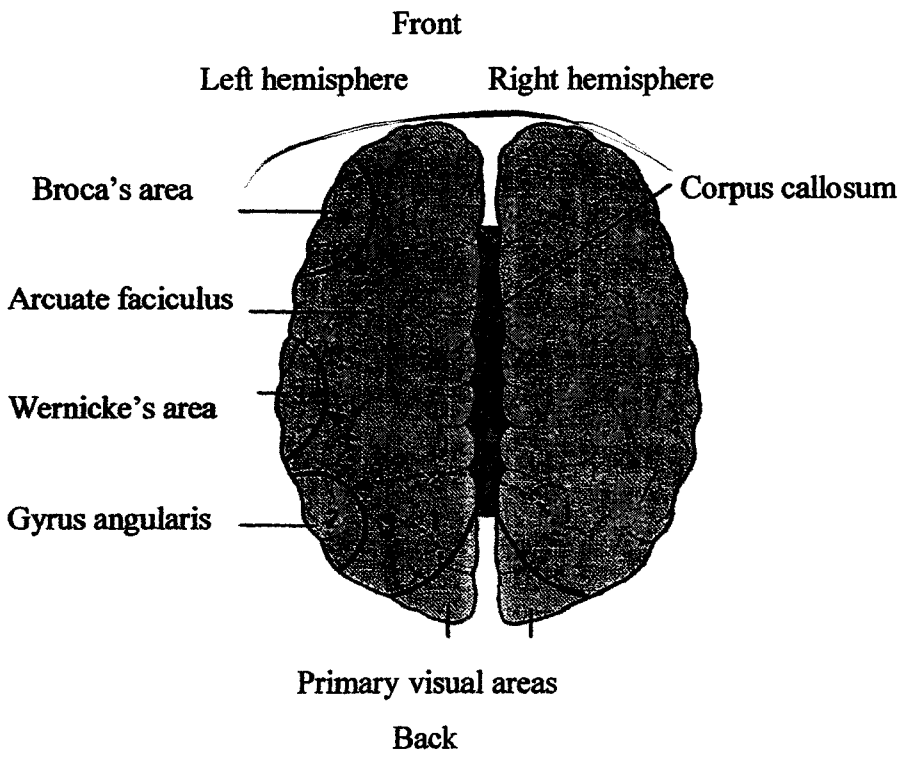
3.1.Clinical neurological approach to reading and writing

Reading and writing are complex processes that require co-operation of various brain functions. According to Beveridge and Comti-Ramsden (1987) there are three most important areas with respect to language processing: Broca's area, Wernicke's area and the angular gyrus. The formulation of language sequencing happens mostly in Broca's area, Wernicke's area is responsible for language comprehension and the angular gyrus integrates visual and auditory information. Korhonen (1995) introduces two main models of observing the processes of learning to read and write. According to Dejenier-Geschwind model, reading is a

serial process that proceeds in certain order. It has also been called 'the one-way model', since it assumes that the process always follows the same course. (Benson 1981, Hynd & Hynd 1984, Luria 1966.)

The Dejenier-Geschwind model explains language processing as follows (see Korhonen, 1995, Beveridge & Comti-Ramsden, 1987): when reading the visual stimuli of letters or words are received in the primary visual areas of occipital lobe and from there the information moves on to visual association area, where the form analysis of letters takes place. Next the information proceeds to the angular gyrus where the graphemes are transformed into phonemes. It is there the information from other senses and information from prior experiences is integrated with the new perceptions.

Picture 2. The reading process according to Dejenier-Geschwind model (in Korhonen 1995:157).



During the reading process, the area of angular gyrus is active in both hemispheres, but the importance of the left dominating hemisphere is usually emphasised. After this the information is shifted to the left temporal lobe where the Wernicke's area and the area of planum temporal play an important role in understanding linguistic symbols. This, however, is not sufficient for complete comprehension of the material to be read, but there are still the posterior parts of the frontal lobe in the left hemisphere where the processes to understand the syntax of the language take place. When reading aloud, the Broca's area and the functions of the motor areas are emphasised. This model explaining reading is actually nearly identical with the Wernicke-Geschwind model for the production and understanding of language (see Atkinson, Atkinson, Smith & Hilgard, 1987).

Luria (1966, 1970) as cited in Korhonen (1995) has analysed the writing process and its relation to nervous system. When learning to write, everything is based on auditory perceptions the analysis of which begins at primary auditory areas. Phoneme analysis takes place in the secondary auditory area in the left temporal hemisphere. Therefore, when learning to write, children prefer to read out loud or silently the word in question in order to make the phoneme analysis easier. By doing this s/he also activates the kinaesthetic areas in the left hemisphere. After this the phonemes are transformed into graphemes in the angular gyrus. The next step is the serial analysis, that is, setting the letters in the correct order to form words, which happens in the prefrontal areas of the left hemisphere. Also the premotor areas are involved in the writing process. The importance of frontal lobes is emphasised in the child's motivation and orientation.

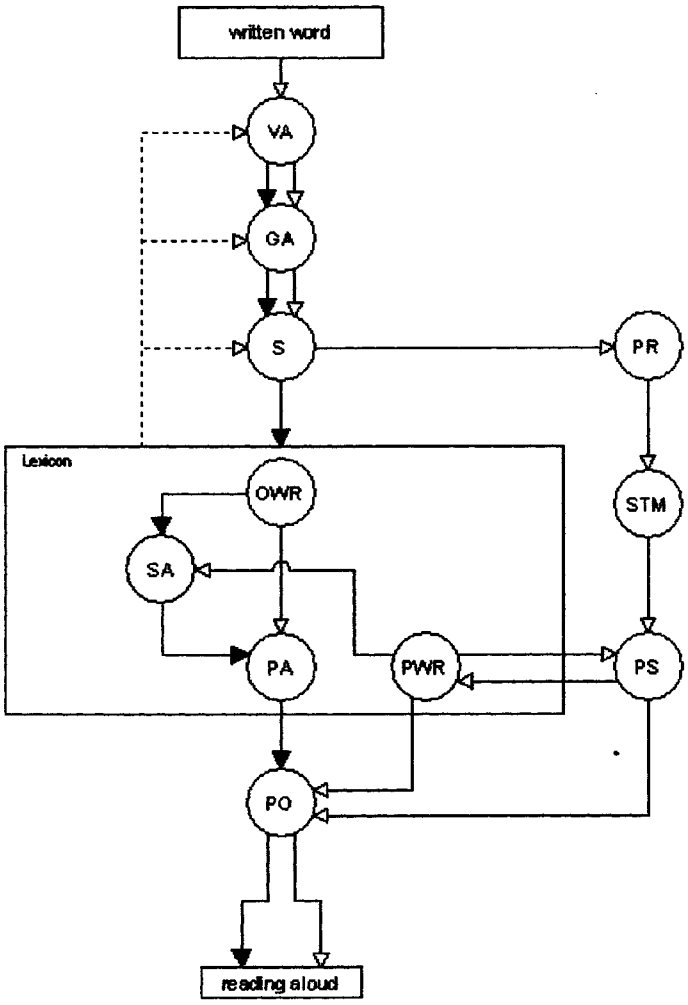
The same processes are explained briefly by Kakkuri (lecture in 1994). According to her the letter in the reading process is first perceived in the visual centre. Secondly, the forms and orders of the letters are segmented in the visual association area. Thirdly, a letter corresponds to a phoneme in the Wernicke's area and finally articulation takes place in the Broca's motor speech area. When writing, the word is first perceived in the auditory centre where it is linked to a

meaning. Then phoneme segmentation takes place in the Wernicke's area and the phonemes are transformed into graphemes in the visual association area. And finally the articulatory model in the Broca's area supports the unification of a grapheme and its motor model.

3.2. Two-route model

Another way of looking at reading is the two-route model. This is especially popular among cognitively and linguistically orientated neurophychological research (see Coltheart 1980, Ellis 1984, Höien & Lundberg 1992). According to this model, the recognition of a word can proceed in two different routes, either by phoneme analysis or by without it, that is, through orthographic analysis. These processes have also been described by terms 'reading by ear' and 'reading by eye' (Ellis 1984), which Coltheart, Patterson and Marshall (1980) have coined 'non-direct strategy'/'non-lexical strategy' and 'direct strategy'/'lexical strategy'.

People read either by using the direct orthographic strategy or the indirect phonological strategy. At first the process of learning to read takes the indirect route, since it includes the phonological synthesis which is the basis of reading. The further one's mastery of literacy develops, the more the orthographic strategy is used.

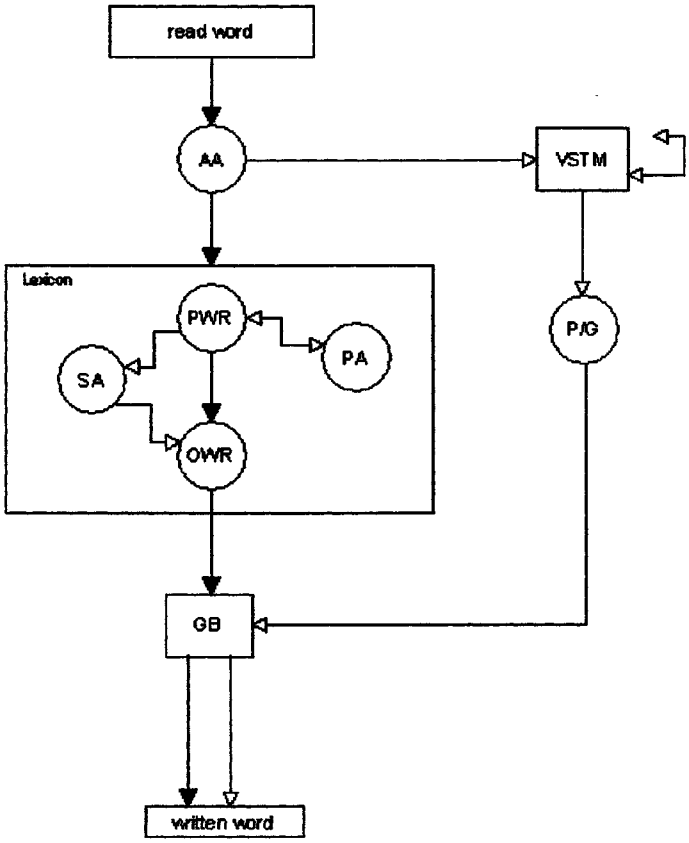


VA: visual analysis
GA: grapheme analysis
S: segmentation
PR: phonological recoding
STM: short-term memory
PS: phonological synthesis
PO: phonological output
OWR: orthographic word recognition
SA: semantic activation
PWR: phonological word recognition
PA: phonological activation

Figure 1. Two-route reading process (Höien and Lundberg 1992: 69).

Both the indirect and direct strategy concentrate on the orthographic entity, i.e. a written word, which is first visually analysed, then segmented into graphemes and finally into syllable. From that on the strategies diverge. The indirect strategy is chosen in order to determine a word semantically. A word is phonologically recoded, transferred into short-term memory in phonological segments, which are united by phonological synthesis. After this the word will either be transferred into long-term memory and/or phonologically produced. After syllable segmentation, a person using the direct strategy will have recognised the word, since the word is found in long-term memory, where its semantic, syntactic and phonological identities have also been restored. The word is comprehended and produced. (see Figure 1.)

The basis for learning to write lies on speech. Before one actually starts to produce one's own text, one has to learn to convert speech into written form. Technically, dictation can be considered a good means of controlling the fundamental technique of writing, this is writing on word level. Höien and Lundberg (1992) explain that there are two strategies according to which the writing process proceeds, depending on whether the word spelling is familiar (orthographic strategy) or not (phonological strategy). Most initial writing consists of words of unknown spelling. This means that novel or new words must be phonologically 'tasted', that is, words are segmented into small units, first into syllables and then into phonemes. Simultaneously the units are restored in short-term memory, where they are matched with graphemes. The match is then restored in grapheme buffer, from where they are recalled after finding the allographic and motoric form of the letters. The word is now ready to be produced. (see Figure 2.)



AA: auditive analysis
P/G: phoneme-grapheme recoding
PWR: phonological word recognition
SA: semantic activation
VSTM: verbal short- term memory
GB: grapheme buffer
PA: phonological activation
OWR: orthographic word recognition

Figure 2. Two-route writing process (Höien and Lundberg 1992:109).

When comparing the orthographic strategy with the phonological one, the difference is that in the former the segmentation of the word need not be done, since the orthographic identity of the word is found in the long-term memory, along with semantic, allographic, kinaesthetic and motor identities. This strategy is employed when the writer has distinguished the difference between oral and written language and is a fluent writer when it comes to familiar words. The phonological strategy, on the other hand, is employed when the writer is confronted with new words or s/he is unable to detect information from the long-

term memory. (see Figure 2.)

3.3 Top-down and Bottom-up processes

The literacy development can also be explained by bottom-up and top-down processes. According to bottom-up processing the perception of written material proceeds from the low level surface information to the high level conceptual information including the semantic meaning of the word. The perceptual features of a word are first analysed by detecting such letter features as ascenders e.g. `b′ and `h′ and descenders e.g. `j′, `p′ and `y′. When the letters are identified, their combinations along with corresponding sound units can be identified. After the synthesis of these two and their match with stored information the word and its meaning is ready to be perceived.

The perception may also proceed the other way round starting from the top as in top-down process. According to this model a reader has got a perceptual hypotheses of certain words which s/he expects to be present on the page. This hypothesis is then checked against perceptual data. The advantage of `top-down`processing is that the required perceptual processing is reduced to those features which the expected words carry. The hypothesis only needs to be confirmed. (Snowling 1987: 61-62.)

The combination of bottom-up and top-down processes is found in the interactive-compensatory model by Stanovich 1980 (see Snowling 1987: 62). He argues that children use context to facilitate poor decoding skill. Children benefit from contextual constraints between words when decoding proceeds slowly and not when they are skilled readers. According to Stanovich context has no effect when decoding becomes automatic.

4 PROBLEMS WITH FOREIGN LANGUAGE LEARNING

Most teachers probably expect their students to have accomplished advanced literacy when entering upper-secondary school, however, this is not always so with dyslexic students. Therefore, it is only natural for a dyslexic student to face considerable problems in everyday classroom situations. Depending on the type of dyslexia, different subjects cause problems. However, foreign languages always seem to be problematic. As was already pointed out in the introduction, we suspect many of our students have come to evening school in order to complete their studies that they never finished in their earlier years in school because of dyslexia. For many pupils foreign languages are the only subjects where their improved reading and/or writing skills still seem to fail them. As a matter of fact, in some cases the foreign language teacher may be the only one to notice the student's dyslexia. For this to happen the foreign language teacher naturally must be aware of the deficit and be able to detect it from the student's symptoms. Unfortunately, many teachers still categorise such students as just lazy or otherwise poor language learners. Most of the dyslexics or the learning disabled will learn a foreign language, but it also takes an effort from the teacher's part, s/he may have to accommodate her/his teaching methods.

Sometimes the deficits in a pupil's performance are already revealed in class during oral practice, but when a teacher asks pupils to write essays or other written tasks, a dyslexic student's written production usually shows the deficit very clearly. A dyslexic pupil's written production is most often the first real document for the teacher that reveals that s/he has had and still has problems in learning English. Further, many pupils with dyslexia have minor or lesser difficulties in performing tasks that do not involve writing, for example in oral practice or in listening comprehension. Some of them do not even show any deficits in reading comprehension tasks. But it is safe to say that all pupils with dyslexia have problems with writing. Sometimes their problems may be small. They may have

difficulties with finding correct words or using tenses or they may have a major problem in simply writing words correctly.

In some countries there has even been discussion whether it is worthwhile in serious cases of dyslexia to study foreign languages at all. In the United States the trend seems to be to seek acceptance for excusing students with learning difficulties from foreign language classes, or having them substitute foreign language requirements with something else (Ganschow, Myer, & Roeger, 1989). In some universities in the United States informal reports claim that even 50 % of the students are suspected of having learning difficulties because of their inability to learn foreign languages (Gajar, 1987).

Lauroma and Ruotsalainen (1989) state in their study that dyslexia is a very significant claim for giving up upper-secondary schooling amongst their clients. Those dyslexic pupils who had chosen to continue their studies in upper-secondary school admitted foreign languages caused most anxieties and frustrations for them. Syvälahti (1989) gathered information about dyslexic students from the matriculation examinations and from their last report cards and compared their results to non-dyslexic students. Koski, Mannos and Nerelli (1992) conducted a similar study amongst upper-secondary pupils. According to their findings, the non-dyslexic pupils did better than the dyslexic pupils in all the subjects that were taken into account. Most of the problems the dyslexic students had were in the studies of the native language and in foreign languages (Syvälahti 1989, see also Koski, Mannos & Nerelli, 1992).

Dinklage (1971) conducted a study at Harvard University amongst some students with dyslexia who could manage the school's rigorous curriculum otherwise, but had extreme problems about learning a foreign language, or could not learn it at all in a normal classroom environment. He found out that the reasons for these students' problems and anxiety were quite often the underlying learning disabilities, which were not causing problems in other classes, since the disabilities

had been overcome earlier through good tutoring and hard work, but which had come back in the language classes. However, when these students were taught using methods of instruction known to be helpful for learning disabilities, most of them were able to pass the examinations necessary to complete their foreign language requirements.

Studies on dyslexics learning a foreign language show that most of their problems are based on their poor knowledge of their native tongue (see Dinklage 1971, Freed 1987, Ganschow & Sparks 1986, Levine 1987, Sparks et al. 1989). Ganschow et al. (1991) reported on their study on English speaking students with learning disabilities studying foreign languages in the 1980's. In this study they compared successful and unsuccessful foreign language learners on variables thought to be significant in learning a foreign language. They noticed that the students with learning difficulties scored significantly lower in vocabulary tests (Modern Language Aptitude Test) and phonological tests (involving, for example, word identification, sound blending, and spelling of sounds and contextual spelling). In the writing sample, differences were found in contextual style, which measured the number of punctuation and capitalisation rules used, but not syntactic maturity, which measured unacceptable grammar instances. Overall, their conclusion was that the unsuccessful foreign language learners who had been diagnosed with learning disabilities had most problems with phonological and syntactic functions in their own native language, and that those weak skills would have an immediate and significant impact on their foreign language studies.

Ganschow and Sparks (1993) formulated a theory explaining problems and variation in foreign language acquisition. In their Linguistic Coding Deficit Hypothesis they also claim that the difficulties with foreign language learning stem from deficiencies in the student's native language system. The student has problems with linguistic codes of language that may be either phonological, semantic or syntactic. According to Ganschow and Sparks' theory poor language learners have difficulty in all three areas, whereas excellent learners are strong in

all of these three. The students with learning disabilities still seemed to have most problems with phonological and syntactic coding. These difficulties may be very subtle and therefore not even recognised in student's native language, and that is the reason why there are still cases where the learning difficulties or dyslexia only show up when the student is learning a foreign language or is trying to master it. (Sparks and Ganschow 1993, Ganschow and Sparks 1995, Ganschow, Sparks & Schneider 1995.)

With their Linguistic Coding Deficit Hypothesis, Sparks and Ganschow (1993) also explain why some students learn to write or read fairly well, but have difficulties with speaking or listening a language or vice versa. These students are poor in one area, but fairly strong in two other areas of linguistic codes. They use the term 'phonological awareness', which means that the student has problems with the basic sound units of language, i.e. phonemes and therefore cannot recognise or use these effectively. As a result, s/he has difficulties even in the perception and production of language needed for basic comprehension, speaking and spelling. The phonological abilities of a person are naturally related to her/his reading abilities, but they also play a significant role in oral communication, i.e. in listening comprehension and ability to speak a foreign language. Thus their suggestion for those teaching foreign languages is that the students must be explicitly taught the phonological systems of the target language by using a great deal of visual, kinaesthetic and tactile practice and input (Ganschow, Sparks & Schneider 1995). The importance of teaching phonological skills with the teaching of foreign languages was also discussed and presented in the First International Multilingual and Dyslexia Conference held in Manchester, England in 1999 [http://ldonline.org/ld_indepth/foreign_lang/multilingualism_conf699.html].

One question that should be considered when learning a foreign language is the choice of the target language. In Finland this is often not possible since it is not optional at all to study a foreign language, but obligatory. However, it seems to be that some languages could be easier for dyslexic than others. In a report on the

First International Multilingual an Dyslexia Conference Robin L. Schwarz [http://ldonline.org/ld_indepth/foreign_lang/multilingualism_conf699.html] refers to speakers who reported on groups of learners who seemed to be dyslexic in one language but not in another and explained this on the orthographical systems of languages. Another speaker described English as a dyslexic language, because of its spelling and lack of regularity in phonological patterns. It was claimed that there are greater numbers of dyslexics amongst speakers of English that in other languages because of its irregularities and vast vocabulary. Indeed, if so, then the question that comes to mind is how difficult English is to those dyslexics who study it as a foreign language. In a way, a dyslexic student has to learn two languages instead of one: a spoken language and a written language and the connection between the two (Mikkelä, 1985:125). As far as English is concerned with its differences between pronunciation and spelling, this is very much so.

Dyslexics do suffer from anxiety caused by the difficulties trying to learn a foreign language. According to Ganschow and Sparks (see also Dinklage 1971), anxiety was not a cause for not learning a foreign language, but a result of it Foreign language studies also seemed to cause most anxiety and frustrations for the dyslexic Finnish students when they were interviewed about their difficulties in upper-secondary school. (Lauroma & Ruotsalainen 1989.)

4.1 Finnish dyslexics learning English

In English speaking countries learning a second language is often optional until in universities where the students have the foreign language requirements, but in Finland foreign language teaching is already begun in third grade. By the time the students reach upper-secondary school they have already been studying at least two foreign languages, in most cases English and Swedish. The problems a dyslexic student has with foreign languages differ from language to language, but there are also many similarities. The Swedish or German sentence structure causes

typically problems for dyslexics learning these languages and, unfortunately, with English the problems seem to lie in all areas of the language making it very difficult for students with dyslexia. The most typical mistake dyslexics seem to make in English is to write the words as pronounced. They also have problems with differentiating phonemes in oral practises and in written production they have problems with consonants not used so much in Finnish (b, c, d, f, g, q, w, x, z). They also find different kinds of structures, articles, and prepositions problematic. (Syvälahti 1983: 86-90.)

As mentioned above (see Chapter 2.5, Characteristics of dyslexic writing and reading) students with dyslexia or learning disabilities can be categorised as having problems either in the area of auditory or visual perception. However, there are few very pure cases of either auditory or visual dyslexics. In most cases it is a question of overlapping linguistic disturbance. The mistakes made by dyslexics can, nevertheless, be divided into categories of auditory or visual origin. Syvälahti (1982:5) lists mistakes typical of Finnish learners of English with dyslexia. The mistakes resemble each other, even though the stimulus has been of separate (auditive/visual) origin. Niemi and Poskiparta (1986) suggest visual processing problems are caused by icon-memory capacity and how visual information proceeds into auditive form. Reversals, for instance, are considered mistakes typical of visual dyslexics but it has been proved that they are mostly auditive by nature.

A student with auditory deficits will naturally have greatest difficulties in the tasks concerning listening comprehension. The learning of rhythm and intonation may be arduous. Making a distinction between certain phonemes may cause overbearing problems for some students. Voiced and voiceless sounds are confused, as well as other pairs of consonants (b-p, d-t, g-k, f-v, c-g, t-th). The student tends to write words as they are pronounced. Inflections are troublesome in several ways: the third person singular -s, regular plural form -s, tenses and adjective/adverb distinctions e.g. `possible-possibly´, `probable-probably´. In some

cases a dyslexic pupil is simply unable to produce answers to questions based on listening comprehension. Most often it is also a question of detecting information from auditory short-term memory (Syvälahti 1982:5, see also Salminen 1982:37-38).

As far as visual perception is concerned, the deficits are similar to the auditory ones. A pupil cannot read words correctly because s/he is incapable of perceiving the written material, s/he is inaccurate and makes mistakes. There are mistakes in rotations (b-d-g-p-q; n-u), reversals (ei-ie, ou-uo), vowel and consonant quality (short/long), compound words, punctuation and non-words. A dyslexic tends to omit or add letters and syllables, has problems with prepositions and general weakness in sentence perception. (Syvälahti 1982:5, Salminen 1982:35-36)

Linguistic competence is innate, unconscious knowledge of language and its structure. Performance is actual use of language in authentic situations. Surface structure contains the correct information of word order in a sentence, which is needed to produce the sentence either orally or in writing. Deep structure conveys the essential syntactic relations in order for one to understand the semantics of the sentence. The linguistic competence of the individual determines how s/he masters the information linked mostly to deep structure. (Ahvenainen and Karppi 1993:15-17.) Many researchers claim it would be useful to teach students the fundamental phonological and syntactic rules of language in their native language first in order to increase the students' linguistic awareness. The students can then use that knowledge to improve their second language learning. (Ganschow et al. 1991.)

4.2 How to help a dyslexic student in foreign language learning

Whether the dyslexic student's problems are of auditory or visual origin, the problem can still be seen in all areas of language learning; reading, writing, listening and speaking. Since the Finnish secondary school students take the

Matriculation Examination at the end of their schooling, in which all different areas of language skills are tested (except speaking), all these different areas should also be taught and learned. As mentioned before, improving the students' phonological skills, i.e. phonological awareness, in native language before starting to learn a foreign language is highly recommended by scholars and may prove to be helpful and have an overall positive influence on students' later language studies.

Another essential thing to take into consideration when teaching a foreign language is to make the learning environment as comfortable and easy-going as possible. The students should feel free of pressures and expectations. The teacher should try to give positive and encouraging feedback to students even if the production was not so successful. Besides teaching phonological skills and creating a positive learning environment there are things that all teachers (regardless of the target language or the learners' native language) can do to make foreign language learning easier for not only dyslexic students but normal students without any learning disabilities, too.

Suggestions that have been given by educators of learning disabled children and adults include providing multisensory reviews, using pictures, maps, charts, etc. New learning material should be presented in small amounts in sequential steps using strategies that will allow students to take in information by using several senses. The language used should be simplified even if not the content. All the new information should be built on prior knowledge and main ideas and concepts should be reinforced through rephrasing instead of repetition. The use of computers can also be very helpful, for some students feel more comfortable working one-to-one with a computer rather than in a crowded possible highly pressured classroom environment. All in all, teaching should be highly structured and predictable. For example, a weekly assignment sheets or course schedules can help students. The presentation of speech should be initially very slow enabling the students to segment the sounds, speed of information processing is usually

slower for dyslexics in addition to the fact that working memory difficulties usually makes it more difficult for dyslexic students to retrieve words. The teacher should naturally avoid giving oral instructions while the students are occupied with something else, for example, copying or oral work. (Almanza, Singleton & Terrill 1995/6, Baca & Cervantes, 1991, Ganschow & Sparks 1993, Moore 1997.)

There has been very little study on Finnish dyslexic students learning English or any other foreign language for that matter. As mentioned in our introduction a pilot study group for dyslexic students was founded in Käpylän iltaoppikoulu in Helsinki at the beginning of the 1990's. Some methods and strategies that have been used to teach these students English have been presented by Moilanen in Tempus (6/7/8, 2000) and in a seminar 'Kaikki Mahdollisuudet Oppia-Messut' ('All Opportunities to Learn') in Helsinki in May 2001. Moilanen gives practical advice for teachers for teaching different areas of language for dyslexic students.

First of all, there are some non-textual things to consider when presenting a text for dyslexic readers. The kind and size of the font and the colour of the paper play a significant role for a dyslexic reader. (Black) Text should not be on white paper, but if it is, the students can use a coloured transparency on the text to make the contrast less disturbing. The text should not be too small and special features like italics should be avoided, since they make the text confusing, thus more difficult to read. If the students have difficulties staying on the correct line, they should use a blank paper with a window cut to it to help them read the text.

It often helps a student to understand a text and learn new words if words can be read aloud, something students should be encouraged to do also at home. Before reading a text the students could be given a chance to brainstorm on the title and the first or last sentence. When reading a text, the students should first learn to look at the text as an entity, 'to get the big picture' and not to be bothered by individual words. Using skimming and scanning is to be favoured. After this kind of beginning they can start to analyse separate sentences on a word level. One way

to approach texts and to learn the meaning of conjunctual words (articles, prepositions, conjuctions etc.) is to leave them all out first and see if the text can be understood without them and then let the students to fill in the gaps themselves. While reading a text the student should try to visualise it as much as possible and maybe even draw pictures on the margin in order for him/her to make it easier to bring back the story. On the sentence level structures and word order can be practised by oral elaboration done in a group or with a partner. Dyslexic students often have problems with multiple choice questions because of their insufficient context, but they also have problems with oral presentation if time is limited. Oral presentation or review on the other hand is often a more certain way of finding out what the student has understood from the text. The students can also construct a dialogue based on the text and act it out. (Moilanen, 2000, see also Shaywitz 1996, Moore 1997.)

Word formation is important for all students learning a new language, especially English, but for dyslexics it is almost vital. A dyslexic student often guesses a word by the beginning of it and if s/he has no clue of affixes, many words of familiar origin which could be understood will pass as unknown words. If the student is aware of the basic rules of word formation, it will help her/him segment the word into smaller units and find the root and understand the word. Therefore practising word formation and segmenting words constantly will surely be worthwhile.

Many dyslexics have 'an essay-phobia'. Therefore Moilanen (2000) suggest that it might be useful to let the student write about whatever they want in the beginning and maybe not even turn it in. When they start feeling more comfortable with writing, the students are taught to write in phases between of which there should be enough time, meaning that all phases should not be gone through in one day. The first phase is the planning of what to write. This can happen in the student's native language in a way s/he finds most comfortable (mind-maps, lists, in a group, with a partner etc.) The second phase is to write a first draft (the text can

still be very poor and partly in one's first language). The third phase is work on the syntactic features of the text and not in the semantics any more. The last phase is to check the text in detail for spelling, grammatical and vocabulary mistakes. The main idea is to let the students do the task in peace, in separate sections. They do not have to mix the syntactics and semantics of the task. Finally, when the teacher reads and corrects the paper, s/he should not use a red pen and correct the mistakes, but to point out the mistake areas with a pencil, so that the student can then correct them his/herself. Giving up using pens with red ink with dyslexic students is recommended because it increases the anxiety and fear towards writing amongst them.

Since most dyslexics have a problem with phonological processing much of the teaching should be built on multisensory methods. The students should be able to use as many senses as possible when learning new things. Moilanen (2000) approaches teaching grammar on a very practical level by using many pictures, charts, pointing arrows, tables, mind-maps, kinaesthetic exercises and even personification of grammar. By personification of grammar he means creating characteristics and relationships between words, word classes and grammatical rules. The students can also be encouraged to work on the grammatical rules themselves, thus increasing their syntactic awareness. They are given material based on which they work out alternative rules compared to textbooks or grammar books. These self-made rules make the structures more understandable for many of them. It is also important to relate the use and importance of grammatical rules to practical language use, e.g. why auxiliary verbs have to be learned or that the passive forms are usually used in written texts and oral communication without them is possible.

All in all, when teaching dyslexics or students with learning disabilities one should bear in mind that the most important thing is time. The students have to be given enough time to prepare their answers and their production. Prior to listening comprehensions the students should be accustomed to the sound systems and

speech very slowly and carefully, so that they get used to the normal speed of speech gradually. In listening comprehensions the dyslexic students need more time to process the task than students without learning disabilities do. Unfortunately, time is usually limited and more than often we tend to move on before all students have been able to finish their tasks. This is understandable since most teachers have very heterogenic classes where they have to work equally on the needs of poor and excellent language learners. Another thing to remember is to keep it simple so that the student will not be scared off by difficult grammatical terms or complicated instructions. And then finally the teacher should remember to encourage the students and to answer them why. Let the students know why things are learned, the relevance, the relations between things and how they are used.

5 PURPOSE AND DATA

In Finland all the students have to take the Matriculation Examinations at the end of the senior secondary school in order to get the Matriculation Diploma. Prior to the examinations most dyslexic students have officially been diagnosed and they get a certificate of their deficit which is then sent to the Matriculation Board along with their examinations. The papers of these students go to a special committee, which was founded in 1976. In some cases the Board may give some compensation to a student with the certificate. In these cases the Committee agrees that the student's deficit has accounted for the poor performance and they suggest to the Board that the student be admitted a next better grade than his/her points would account for or the censors give better points than they normally would to a non-dyslexic student. So the student may get compensation for his/her deficit in one subject, but not more than one. (Ylioppilastutkintolautakunta 1991, see Appendix 5) There have been some changes made into this statute after the

recommendation by the Ministry of Education. The new statute will be executed on May 1, 2001 (Ylioppilastutkintolautakunta 2001, see Appendix 6).

As data for our study we collected the Matriculation Examination papers from the spring 1995 of fifty dyslexic students and as a comparison group fifty non-dyslexic students' papers. We chose the same number of papers from different grades, five laudaturs, ten magna cum laudes, ten cum laudes, ten lubentur approbaturs, ten approbaturs and five improbaturs for both groups. Since laudaturs and improbaturs are the smallest groups of grades given, we also chose a smaller amount of those for our study. The sex of the students was of no importance. All the papers of the students without dyslexia are from one school, whereas the students with dyslexia come from all over Finland. An important criterion for the dyslexic students that we chose for our research was the certificate proving their dyslexia and classifying the special features of it. We had been very specific in choosing students with detailed descriptions of their deficit, in order to be sure they were actual dyslexics.

The English Matriculation examination in 1995 consisted of listening comprehension, reading comprehension, structure and composition assignments. Both the listening and reading comprehensions were divided into two parts: the multiple choice questions and open questions, which were to be answered in complete sentences. The number of multiple choice questions in both the listening comprehension and the reading comprehension was twenty. There were five open questions in both comprehension parts but the language was different. Listening comprehension questions were answered in English whereas reading comprehensions in Finnish. The structure assignment had forty multiple choice questions which consisted of both lexical and grammatical problems. The composition of between 150 and 200 words was to be written from one of the four given titles.

The purpose of our study is to determine the level of the language performance of pupils with dyslexia in the Matriculation Examinations by the quality and quantity

of the errors they made. We are interested in the students' own production and therefore concentrate on analysing the compositions. In the compositions there is one mistake category (spelling) in which there was a significant difference in the amount. Therefore, the specific research questions that our study seeks answers for are the following: What are the differences in the spelling mistakes between pupils with dyslexia and without dyslexia? Can the differences in results between the groups be explained by dyslexia?

First we identified all the mistakes in the compositions by dividing them into the eleven categories given in the error list used by the dyslexia committee of the Matriculation Examination Board. This list was given to us by an English censor, Mirja Tolsa. The categories are as follows:

Table 2. List of error types in compositions by Mirja Tolsa.

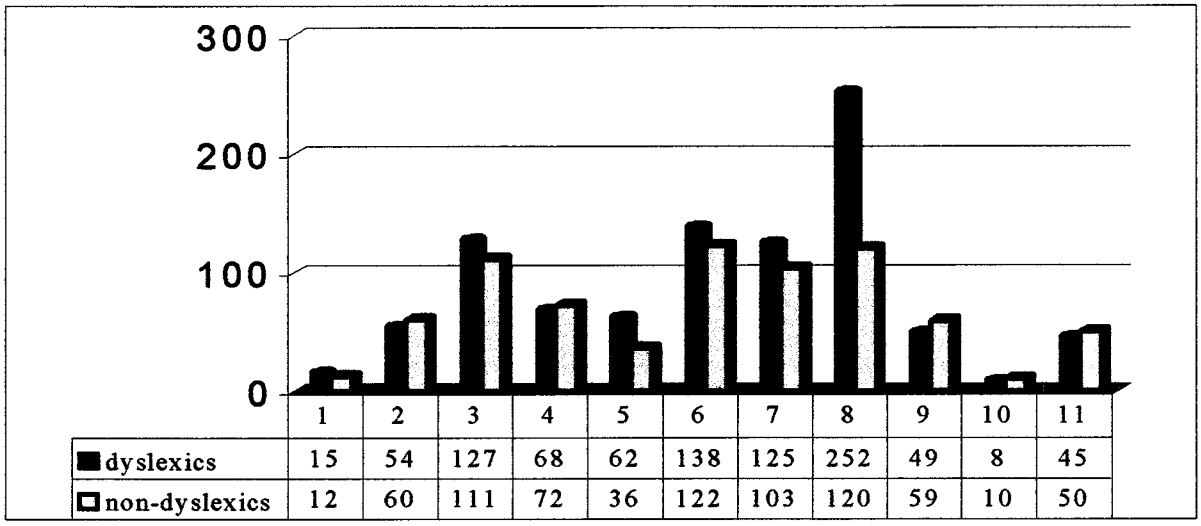
1. incomprehensible sentence/ phrase
2. congruence
3. ungrammatical and inconsistent use of verb
4. nouns
5. pronouns
6. articles
7. prepositions
8. spelling
9. false idioms
10. self-made words
11. sentence structure

In an incomprehensible sentence the student has confused word categories and/or spelt words incorrectly and/or used word order so badly that the sentence does not communicate even in the given context e.g. *Mobile phone is great thing what someone people so were has in worl maid.* A congruence error is where the noun and the verb are not in the same number, e.g. *We sees them coming.* Mistakes in the use of the active and passive tenses, modal auxiliary verbs and all verb forms as well as the use of a double negation e.g. *nobody don't no nothing* belong to

category (3) , ungrammatical and inconsistent use of verb. The category of nouns includes incorrect use of singular and plural noun forms, confusion of nouns with other word classes e.g. *safe-safety, invite-invitation* etc., mistakes in using possessives and apostrophes, also in contractions. The pronoun category covers all the errors which include pronouns (personal, possessive, reflexive, indefinite, demonstrative and relative pronouns), including the mistakes with pronoun pairs `one-the other′, `some-others′ etc. The errors in category (6) include the omitting and adding of articles, the confusion of indefinite and definite articles and the misplacing of articles e.g. *a such nice man, she bought a too short skirt.* The preposition category contains all the uses of prepositions, with adjectives, verbs or nouns, or the use of prepositions determining time, place and manner. All the spelling mistakes belong to category (8). In the category of false idioms we placed phrases and idioms that were not correctly used in the context or the meaning of which was not correctly understood. These were often phrases that were obviously memorised and placed in the compositions even if they did not really fit e.g. *to lift one's IQ,, to let someone alone.* Self-made words included words in which the interference of another language was clear to depict or words that the student had made up since s/he probably could not recall the correct word. The last category, sentence structure, covered stylistic mistakes (repetition or copying of the title; excessive use of sentences beginning with 'and'; too many head clauses without subordinate clauses, and wrong stylistic register (too serious or cheerful for the title), and structural mistakes (illogicalities, excessive use of pronouns or wrong word order).

After analysing the mistakes according to the categories in Tolsa's list, we concentrated on the categories in which the students had made most mistakes (see Figure 3). In these categories the amount of mistakes was over ten per cent of the total amount of mistakes. There were four categories in which this was the case and they were the same in both groups: use of verbs, articles, prepositions and spelling. When we compared the percentage of the four categories between the dyslexia group and the comparison group we noticed that the only category in

which there was a statistically significant difference was spelling. The spelling mistakes made by the dyslexia group was 26,7 % of all the mistakes they had made and the corresponding percentage in the comparison group was 15.9 %. Since our aim is to find out where the main difficulties in the dyslexic students English production lie and where dyslexia most clearly affects the outcome we decided to concentrate on the spelling mistakes.



	1	2	3	4	5	6	7	8	9	10	11
dyslexics	15	54	127	68	62	138	125	252	49	8	45
non-dyslexics	12	60	111	72	36	122	103	120	59	10	50

Figure 3. The number of mistakes according to the categories by Tolsa.

In order to find out the nature of the spelling mistakes and their relationship with dyslexia we used the list of dyslexic mistakes given by Ruoppila, Röman and Västi (1969), which, although quite old, is still used for the diagnosis of dyslexia in Finland. The mistakes in this list are divided into sixteen categories:

Table 3. The dyslexic mistake categories by Ruoppila, Röman and Västi (1969).

1. capital or small initial letter
2. reversal or rotation
3. missing letter in gemination
4. missing letter in long vowels
5. missing letter
6. m/n confusion

7. ng-sound mistake
8. wrong letter
9. mistakes in compounds
10.mistakes in punctuation
11.missing word
12.wrong but meaningful word
13.wrong word ending
14. non-word
15.missing syllable
16.additional letter and other mistakes

This list names the typical features in a dyslexic student's writing. There is inconsistent use of capital or small letters at the beginning and in the middle of sentences, also words that are to be written with a capital initial are spelt with a small one and vice versa, there are reversals (letters changing places in a word, words changing places in sentences causing incorrect or perhaps even incomprehensible sentences) and rotations (letters turning upside down or horizontally around b-d-g-p-q). Dyslexic students also tend to miss letters in general or especially in cases of double vowels or consonants, they have problems with the ng-sound, confuse m's and n's with each other, and simply write wrong letters. They have problems with compounds, writing compounds separately or writing words together that are not compounds. They make mistakes in punctuation, leave out words or use words that are not idiomatically correct (wrong but meaningful words). They tend to write words with a wrong ending or without an ending, they might also miss syllables at the beginning of a word or in the middle of the word. But they may also add letters to words or write words that are completely incomprehensible even in the context, those being non-words. Our analysis of the compositions is then based on these two lists, the list given to us by Mirja Tolsa and the list by Ruoppila, Röman and Västi (1969).

6 DATA ANALYSIS

The last part of the English Matriculation examination is the composition assignment. The students are given four titles from which they choose one. The number of words is limited to between 150 and 200 words. Under some titles the students are given some guidelines and questions on which to base their composition contents. In spring 1995 the titles given were the following:

1. Us - Selfish?
Young people are usually accused of being selfish. How true is it? Is it true even today?

2. Technology - Master or Servant?

3. How to deal with an Angry _____?
Choose a person (parent, teacher, friend, boyfriend, girlfriend ...) and describe what you do when he/she is angry. Write the full title.

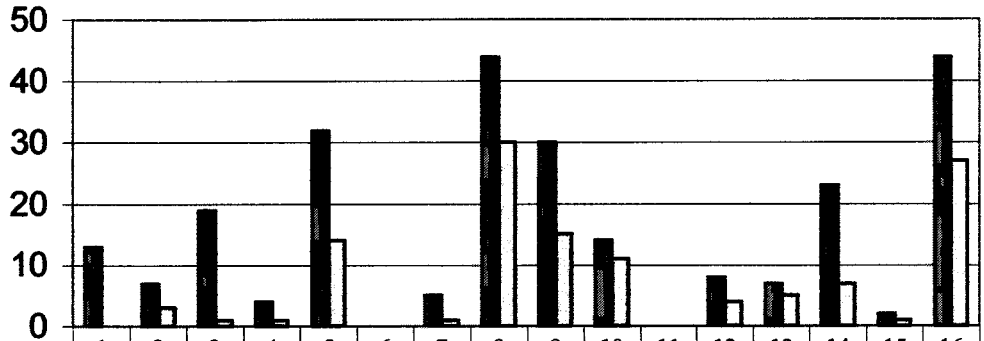
4. It All Started as a Harmless Joke

The most popular title on which both the dyslexic and comparison group students wrote was number three, the corresponding figures being 21 for the dyslexics and 19 to the comparison group. The choice is quite obvious since everyone can relate to the title number three and it does not require advanced vocabulary. The titles one and two were equally popular among both groups whereas the title number four was least appealing. (see Table 4.)

Table 4. The number of compositions written under each topic.

	Dyslexics	Non-dyslexics
Topic 1	13	12
Topic 2	12	11
Topic 3	21	19
Topic 4	4	7

As we described earlier, we have concentrated only on spelling mistakes found in the compositions. The total number of spelling mistakes in dyslexic students' compositions was 252 whereas the students in the comparison group had made 120 spelling mistakes. (see Figure 4.)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
■ Dyslexics	13	7	19	4	32		5	44	30	14		8	7	23	2	44
□ Non-dyslexics		3	1	1	14		1	30	15	11		4	5	7	1	27

Figure 4. The number of mistakes in different categories by Ruoppila, Röman and Västi (1969).

The dyslexics' spelling mistakes covered the categories more equally. The only categories where we found no mistakes in were groups six (m/n confusion) and eleven (missing word). The comparison group made no mistakes besides these two groups in category one (initial letter). Most mistakes in both groups, however, were made in the same categories, those being five (missing letter), eight (wrong letter), nine (compounds) and sixteen (additional letter and others). Noticeable differences between the two groups were found in categories one (initial letter), three (geminations) and fourteen (non-word). We will present the result of each category in figures with percentages not numbers, since they show more clearly the amount of mistakes made in each category compared to the whole amount of mistakes. In this way the comparison between the two groups (the dyslexics and the non-dyslexics) is more valid. The number of mistakes made in different categories by both groups can be seen in Figure 4.

When we analysed the various mistake categories we found some tendencies in the spelling mistakes. Words were spelt as pronounced, voiced and voiceless sounds were confused (b/p,d/t,g/k), vowel and consonant quality caused problems. These tendencies can be found in more than one mistake category. Words that were spelt as pronounced could be found in six different categories. The total amount of words spelt as pronounced in the dyslexic group was 97 out of 252 (38,4%), and in the comparison group 44 out of 120 (36,6%). The number of words in which voiced and voiceless sounds were confused was 16 (6,3%) in the dyslexic group and in the non-dyslexic group 13 (10,8%). Vowel and consonant quality mistakes were found in 40 words in the dyslexic group (15,9%) and in 15 words in the comparison group (12,58%).

6.1 Capital/ small initial letter

We found no capital or small initial letter mistakes in the non-dyslexic students' papers. The thirteen (13) mistakes (see Figure 4) the dyslexics had made were mostly caused by native language interference. They were words that were spelt with a small initial letter in Finnish *friday*, *pope*, *english* and *stoneage*. There were two exceptions in this category *Master* and *Servant*, which the student had copied from the title. Obviously they had misunderstood why they were written with a capital letter. The percentage of the mistakes the dyslexics had made in this category was 5,2%. (see Figure 5)

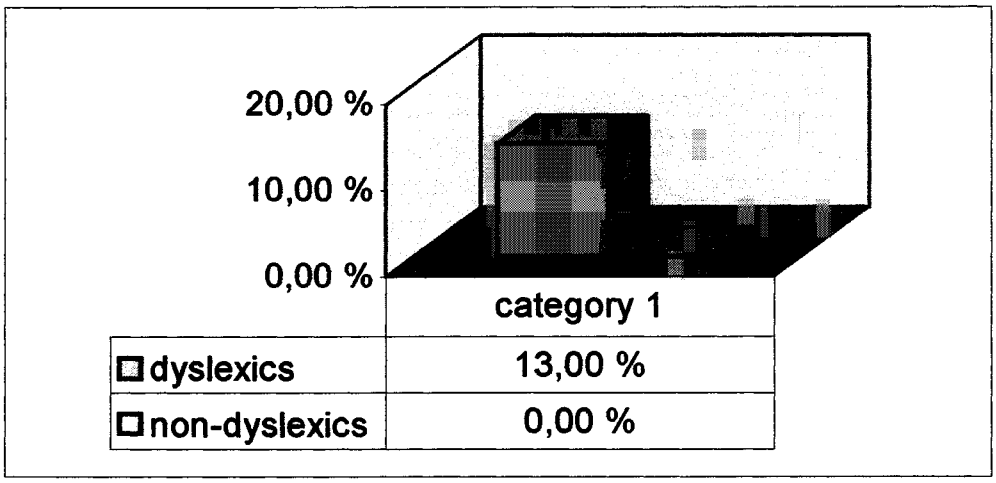


Figure 5. The percentage of mistakes in category 1 (capital/ small initial letter).

6.2 Reversals and rotations

Reversals and rotations are the kind of mistakes that most often reveal dyslexia. Surprisingly, there were as many p/b rotations in the compositions of both the dyslexic and the non-dyslexic groups. We found this odd and therefore interpreted the p/b-misspelling as a mistake of voiced/voiceless sounds, which is a typical Finnish mistake in English. Thus we placed all such words in category 8, wrong letter.

Out of the seven (7) mistakes (see Figure 4) the dyslexics had made there were some true reversals e.g. *frist* 'first', *gril* 'girl', *nucreal* 'nuclear' and *thrid* 'third'. The non-dyslexics had made three mistakes belonging to this category, which can either be explained by Swedish interference *handel* 'handle' and *for exampel* 'for example' or as a typical spelling mistake *whitout* 'without'. The corresponding percentages of the mistakes made by each group can be seen in Figure 6.

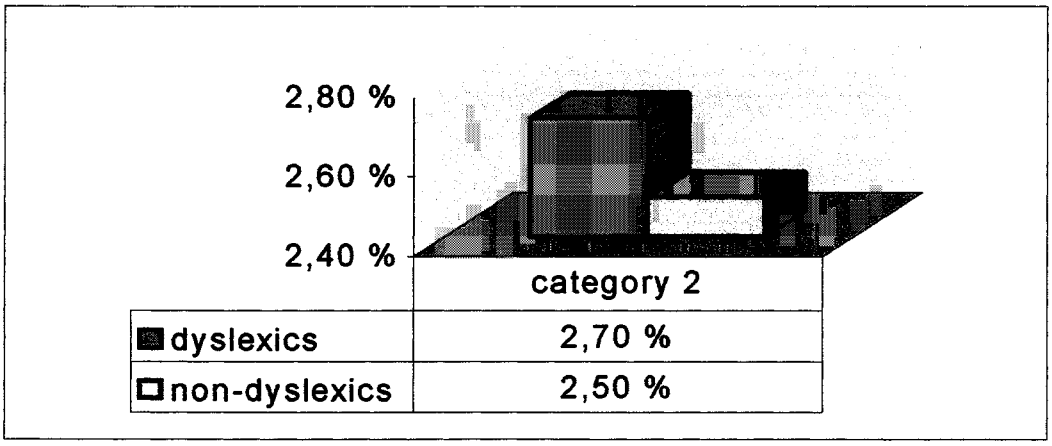


Figure 6. The percentage of mistakes in category 2 (reversals and rotations).

6.3 Missing letters in geminations

In the compositions by the dyslexic students there were nineteen (19) words where a letter was missing in gemination (category 3) whereas in the compositions by the non-dyslexics there was only one (1) (see Figure 4). Mistakes in this category can be explained in two ways: the students have simply spelt the words as they are pronounced or they are typical dyslexic mistakes, which explains why there were so many more in the dyslexia group compared to the comparison group. Missing consonants were found both in the middle of the words and in the end: *hapend, inteligent, posible, presure, useles, proces*. The only misspelt non-dyslexic word was *stil*. The percentages, which can be seen in Figure 7, were 7,5 % and 0,8 %.

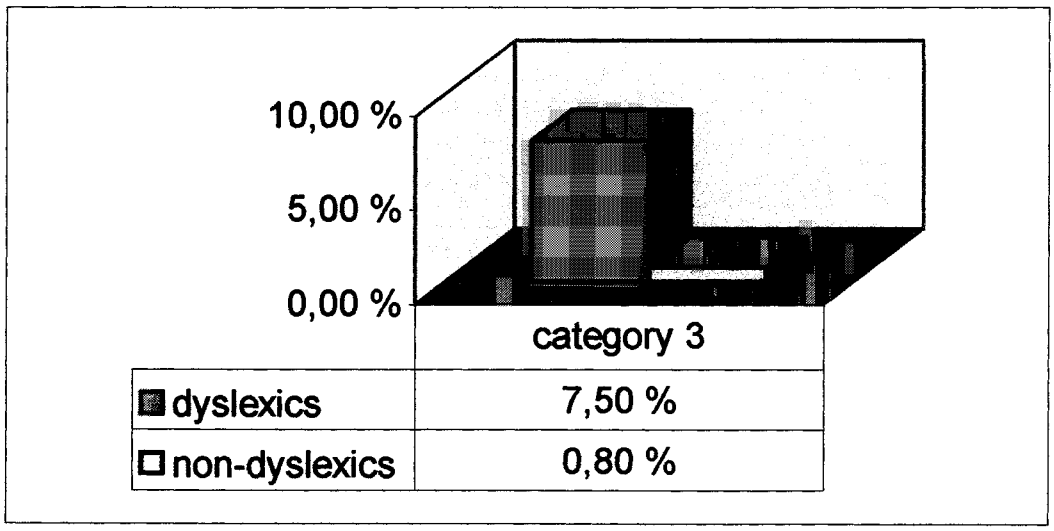


Figure 7. The percentage of mistakes in category 3 (missing letters in geminations).

6.4 Missing letters in long vowels

The category 4 (missing letter in long vowel) had only one word that could be interpreted as spelt as pronounced *childhod*, whereas the other words in this category, *soner, vacum, coffe* are typical dyslexic mistakes, causing the dropping of the other vowel. The only non-dyslexic mistake was found in word `too´, which the student had spelt as *to*. This mistake is most likely caused by carelessness or haste. The number of mistakes made in this category by the groups can be seen in Figure 4 and the percentages in Figure 8.

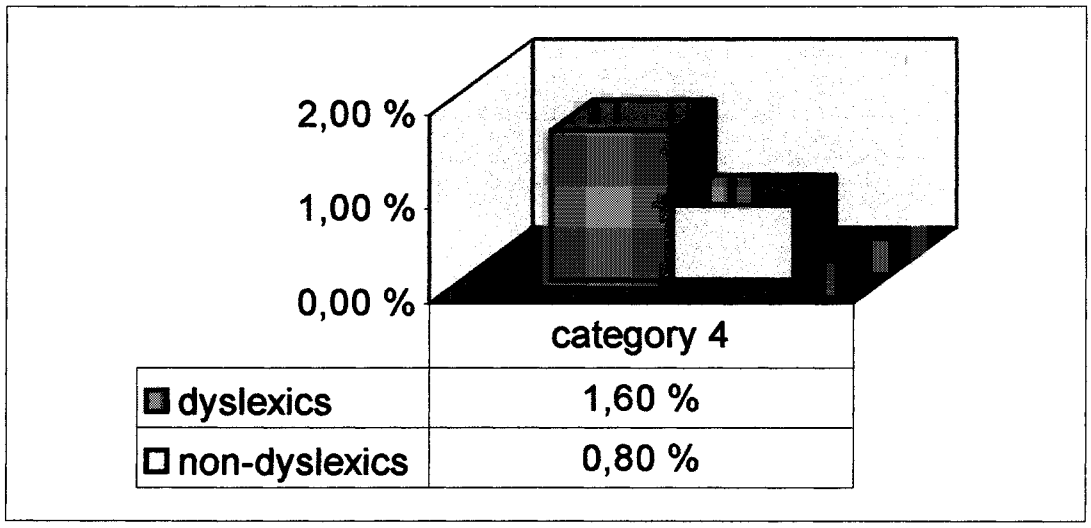


Figure 8. The percentage of mistakes in category 4 (missing letters in long vowels).

6.5 Missing letters

Quite a large number of words were spelt as pronounced in the 'missing letter'-category (5), *relly, explaned, frend, truble, stik.* These words covered 46,9 % of the total amount of dyslexic words (32) in this category. The equivalent percentage for the non-dyslexic group was 35,7 out of the total number of fourteen (14) words in this category (see Figures 4 and 9). Other missing letters in words in this category showed no consistency. There were letters missing in different parts of the words, in the middle and in the end; both consonants and vowels were missing, the consonants outnumbering the vowels. We found no difference between the dyslexic and the comparison group other than the above mentioned percentage in words spelt as pronounced.

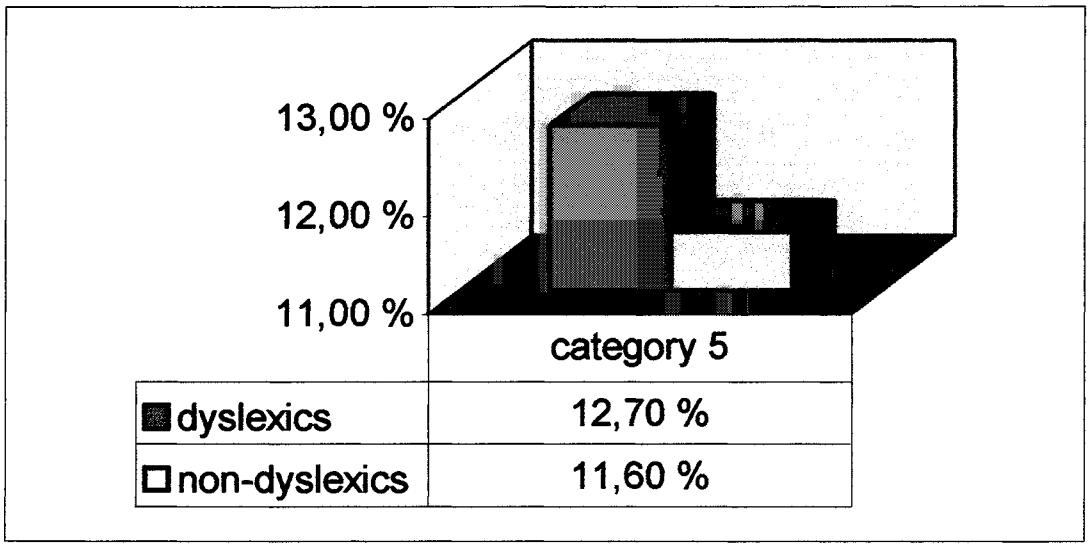


Figure 9. The percentage of mistakes in category 5 (missing letters).

6.6 Ng-sound mistakes

We will now move on to category 7 without discussing category 6 (m/n-confusion), since we found no mistakes belonging to that category in the compositions.

The words in category 7 (ng-sound mistake) were quite few, only five in dyslexic group and one in the comparison group (see Figure 4). The mistakes, however, were of two types. Firstly, there were words in which a letter was missing, *learnig, evenig, thinkin* and secondly there were mistakes which can be explained by voiced/ voiceless-sound confusion, *thing, thinks, somethink.* The dyslexics had made both kind of mistakes, whereas the only mistake in non-dyslexic group was the voiced/voiceless-confusion *somethink.* The corresponding percentages are presented in Figure 10.

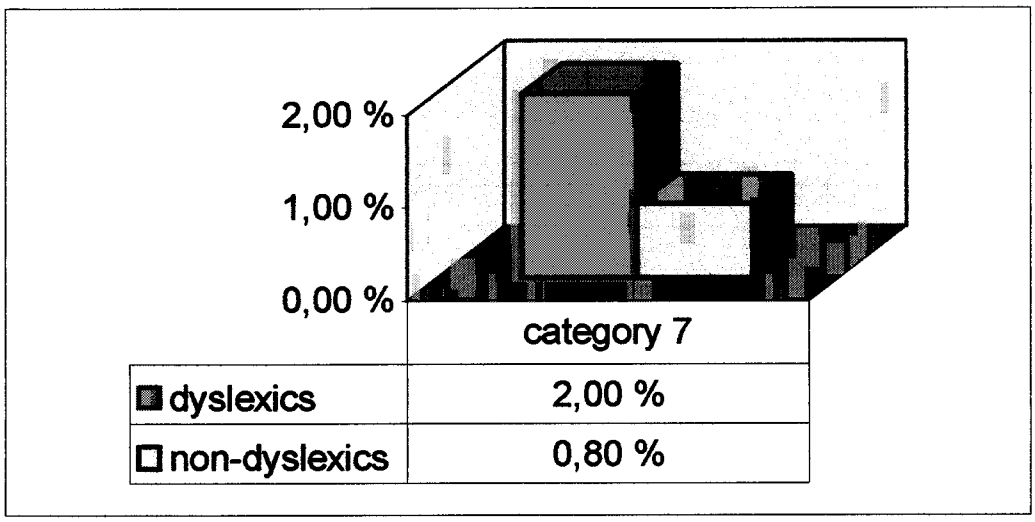


Figure 10. The percentage of mistakes in category 7 (ng-sound mistakes).

6.7 Wrong letter

Words in category 8 (wrong letter) can be divided into three major mistake groups amongst both the dyslexics and the non-dyslexics. Firstly, there were those that were spelt as pronounced e.g. *ather, anpleasant, elefants, hause, siriously.* Secondly, there was confusion between voiced and voiceless sounds e.g. *ingrease, examble, carage, stradegy, petray.* This confusion is explainable by the fact that the Finnish language has so few words where the distinction between voiced and voiceless sounds makes a difference. Therefore there is often carelessness in pronunciation of these sounds also in English. And thirdly, the words that had /s/, /sh/ and /k/ sounds seemed to be difficult, the spelling varied in words like `especially´ *expecially*, `social´ *sosial*, `instance´ *instanse*, `music´ *musik*, `perfectly´ *perfektly*. The misspelling of the letter 'c' can be explained by its Finnish pronunciation as either /s/ or /k/.

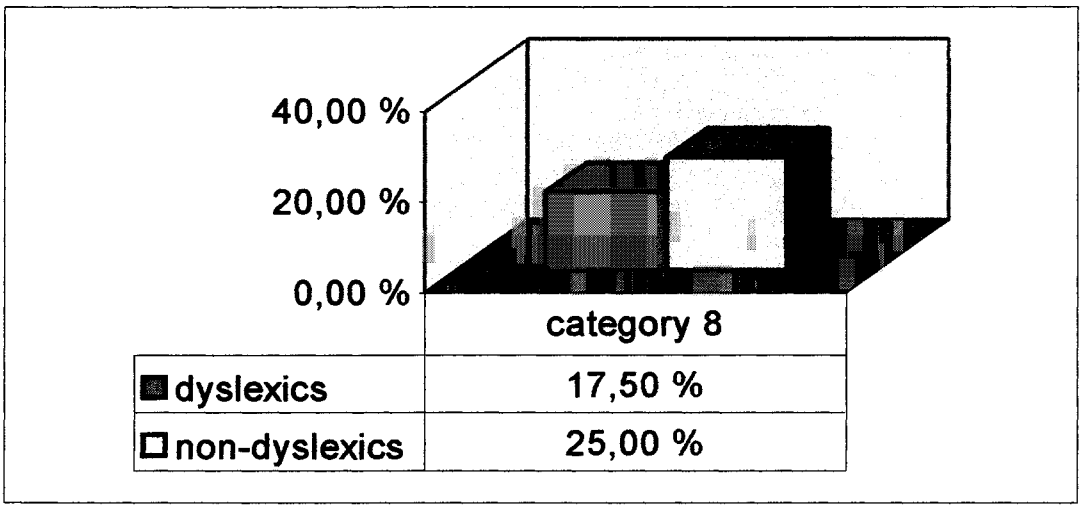


Figure 11. The percentage of mistakes in category 8 (wrong letter).

The words which did not fit into these three mentioned groups, had either vowel mistakes such as *eternety* `eternity′ and *opportunaties* `opportunities′, or they were simple mistakes of carelessness *comforlable* `comfortable′ and *to discust* `to discuss′. The only difference between the dyslexic group and the non-dyslexic group was in the relative amount of mistakes the students had made in this category. The non-dyslexics had 30/120 mistakes (25%) when the dyslexics had made only 42/252 (17,5%). We thought this was surprising, but found no explanation for this. (see Figures 4 and 11.)

6.8 Mistakes in compounds

Most mistakes in compounds (category 9) in both groups were words that were spelt together such as *busstation, carindustry, nuclearmissile* and *redwine*, because the words are compounds in Finnish. However, in the texts by the dyslexics there was a group of words that they had written as one word, or words that were written apart, instead of the correct form. The words that were written together even though they consist of separate parts in English may be explained by the Finnish equivalent which is one word e.g. *ofcourse* `of course′, *atleast* `at least′ and *aswell* `as well′.

It is interesting so many of the dyslexic words in this category consisted of words, which are not compounds, but words that the students had, however, segmented into 'meaningful' parts *a go* `ago′, *our selves* `ourselves′, *now a days* `nowadays′ and *to gether* `together′.

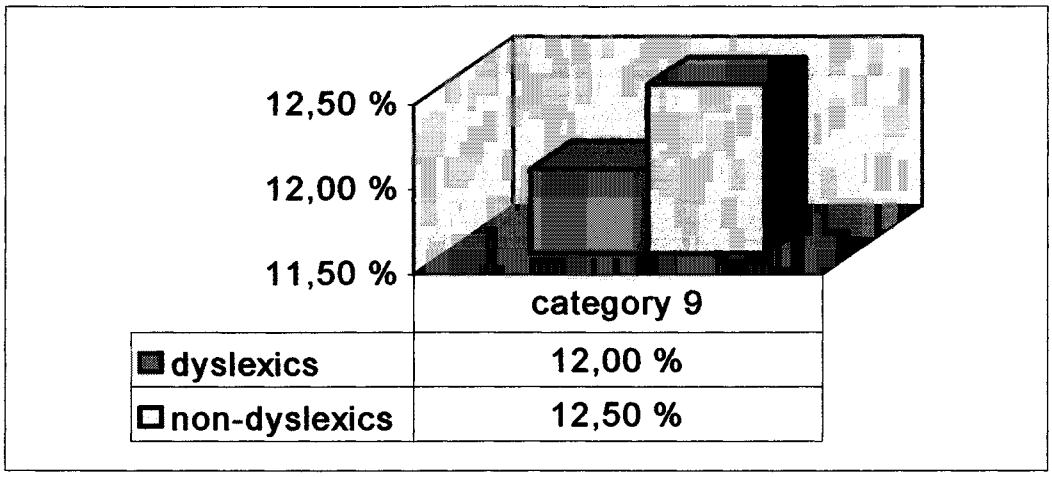


Figure 12. The percentage of mistakes in category 9 (mistakes in compounds).

In both groups there were also a few words which can not be explained with the Finnish interference e.g. *afterthat* 'after that', *everytime* 'every time' and *world wide* 'world-wide'. The rest of the words in this category were those that are written with or without a hyphen e.g. *ten meters high* 'ten-meters-high', *over reacting* 'over-reacting', *a lovely-girl* 'a lovely girl' and *out-dates* 'outdates'. We found no difference between the dyslexic and non-dyslexic groups in the quality of the mistakes. The only difference was the number of mistakes, the dyslexics had made 30 mistakes (12 %) and the comparison group only 15 (12,5 %) (see Figures 4 and 12).

6.9 Mistakes in punctuation

Since our focus here is spelling mistakes, we concentrated on punctuation mistakes within words, not between words or in sentences. Therefore all the commas and full stops used in sentences have been omitted from our analysis. Most of the words that we found in the compositions, consist of mistakes in the plural and possessive forms of the nouns. Both the dyslexic and the comparison group had the same amount of plural mistakes (2), the students had added apostrophes into non-possessive plural forms e.g. *your lesson's* 'your lessons' and *many fight's* 'many fights'.

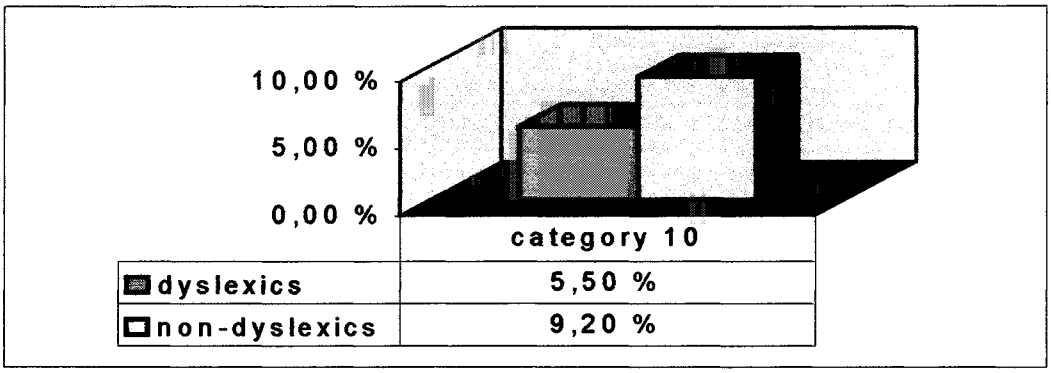


Figure 13. The percentage of mistakes in category 10 (mistakes in punctuation).

Most mistakes in this category were errors in the possessive forms. The students had either left out the apostrophe *peoples knowledge* 'people's knowledge' or misplaced it *our generations'* 'our generation's'. Both groups had the same number of possessive mistakes (8). We have also included in this category contractions which the students had misspelt such as *didint* 'didn't' and *I'am* 'I'm'/'I am'. Both these mistakes were made by the dyslexics but not by the non-dyslexic students. One student in the dyslexic group had left out the apostrophe in 'o'clock' and also misspelt the word *a clock*. In the comparison group we found one mistake where the student had added the apostrophe where it does not belong *20'th century* '20th century'. The total number of mistakes can be seen in Figure 4 and the corresponding percentages in Figure 13.

6.10 Wrong but meaningful word

We will now move on to category 12 without discussing category 11 (missing word), since we found no mistakes belonging to that category in the compositions.

In this category there are homophones, words that are pronounced in the same way, but have different written forms. These are mistakes that would go unnoticed in spoken language. Some mistakes in this category are very typical errors in parts of speech. For example, verbs and nouns are confused e.g. *advice* 'advise' and *affect* 'effect'. These mistakes were found in both the dyslexic and the comparison group. The rest of the words we included in this category were simply words with the wrong written form e.g. *steel* 'steal', *where* 'were' and *break* 'brake'. Both groups had made mistakes that belong to this category, although the dyslexics mistakes outnumbered those by the comparison group (9/4) (See Figure 4). The corresponding percentages are found in Figure 14.

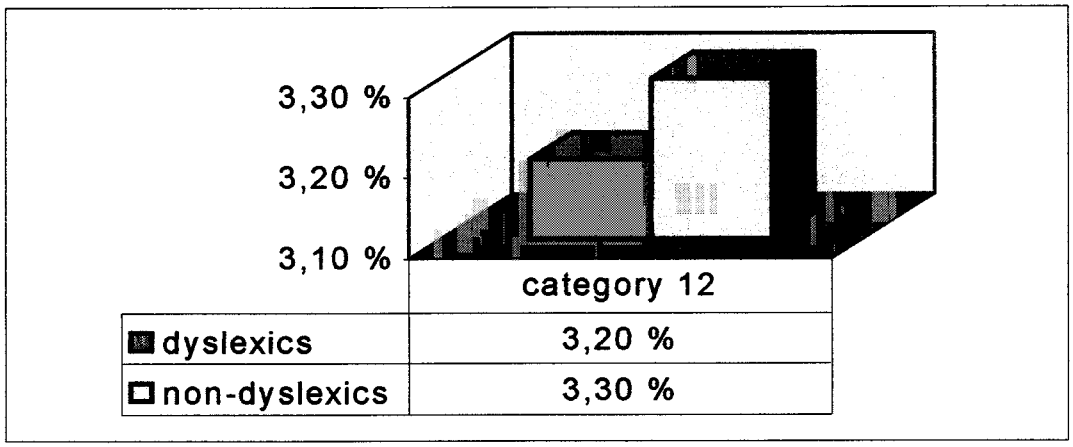


Figure 14. The percentage of mistakes in category 12 (wrong but meaningful word).

6.11 Wrong word ending

The words that we placed in this category had mostly grammatical mistakes. Both the dyslexic and the non-dyslexic students had verb forms where they had left out the silent –e before the –ing-form e.g.. *rageing* 'raging' and *takeing* 'taking'. Similarly, the letter 'y' had not been changed according to the grammatical rules before the past tense or plural form *worryed* 'worried' *sayd* 'said' and *lovestorys* 'love stories'. These mistakes were found only in the dyslexic students compositions. We also included the mistakes in the use of the possessive suffix in this category, these were cases when the students had added unnecessary possessive elements e.g. *the house's door* 'the house door', *police's car* 'police car'. These mistakes were made by non-dyslexic students. In the dyslexic group the students had actually made a double mistake, since they had meant to form a possessive form, but had left out the apostrophe *everydays life* 'everyday life', *my weekends plans* 'my weekend plans'.

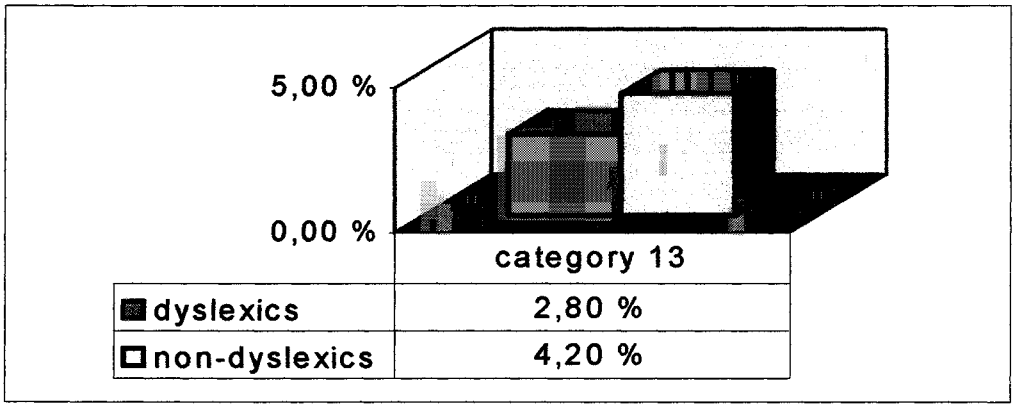


Figure 15. The percentage of mistakes in category 13 (wrong word ending).

6.12 Non-words

In this category we included words that have two or more spelling mistakes, which makes most of them incomprehensible outside context e.g. *alauens* 'allowance', *a casenly* 'occasionally', *yeald* 'yelled', *diel* 'deal', *weating* 'waiting'. Some of them might even be difficult for non-Finnish readers to understand even in context, but a Finnish reader would most likely understand what the student had tried to say, since s/he had written the words as s/he would have done in Finnish e.g. *enaf* 'enough', *curffue* 'curfew', *lounly* 'lonely' *nodest* 'noticed', *dother* 'daughter', *skear* 'scared', *amboleavebull* 'unbelievable', *sinsierly* 'sincerely' and *agen* 'again'. This category was the one where the dyslexics had made clearly more mistakes than the comparison group (23/7) see Figure 4, even though there were all in all surprisingly few non-words in the students' production.

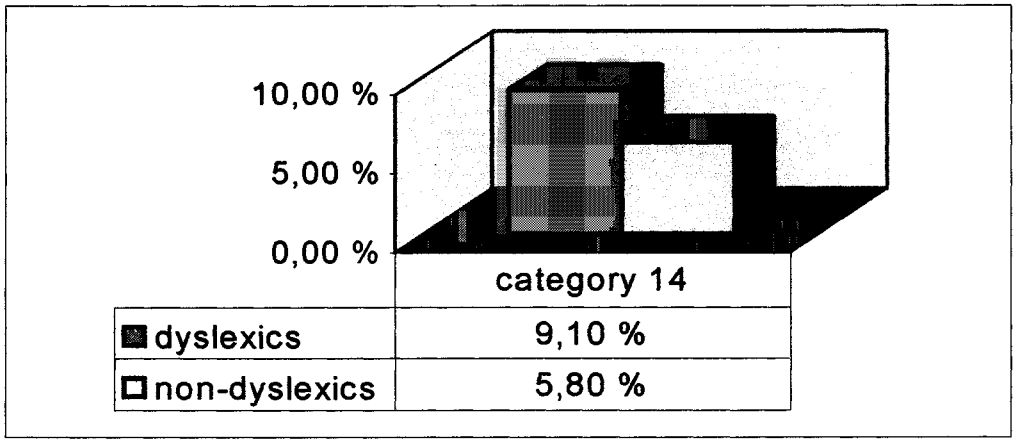


Figure 16. The percentage of mistakes in category 14 (non-words).

6.13 Missing syllable

The difficulty with this category was that the error analysis by Ruoppila, Röman and Västi is used to analyse Finnish mistakes where segmentation rules are very different. We intended to include in this category words that would lack prefixes, suffixes and words that were missing syllables in the middle. But we did not come across any such words, instead we found three words that we interpreted as missing a syllable-like element. Two of them were made by the dyslexic students, *shamed* 'ashamed' and *polisize* 'apologise'. Omitting the first letter in a word is a very typical mistake made by dyslexics. In these cases the first letter is also a syllable. There was one word in the non-dyslexic students' compositions that had a missing syllable, *automaticly* 'automatically'. This is less likely a spelling mistake, the student has simply forgotten the grammatical rule. For the numbers and percentages of mistakes see Figures 4 and 17.

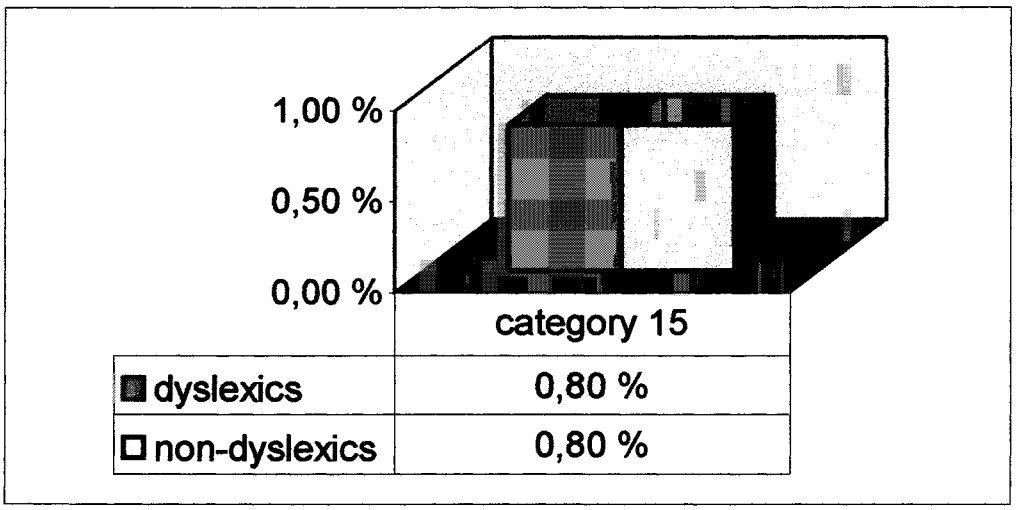


Figure 17. The percentage of mistakes in category 15 (missing syllable).

6.14 Additional letters and others

In the compositions by the dyslexic students there were 44 words and in those by the non-dyslexic students 27 words that we placed in the category 'additional letter and other mistakes' (16) (see Figure 4). Most additional letters can be explained by pronunciation e.g. *foor* `for′, *jusually* `usually′, *maschine* `machine′, *beeing* `being′, *succseed* `succeed′, *moust* `most′ and *woun't* `won't′.

One group of words consists of mistakes with the prefix al-, *allready* `already′, *allways* `always′, *all so* `also′ and *allright* `alright′. There was no difference between the dyslexic and the comparison group in the number of these words.

Another group were words with a doubled consonant either in the middle or at the end of the word e.g. *shinning* `shining′, *equippment* `equipment′, *appologies* `apologies′, *opinnion* `opinion′, *huntting* `hunting′, *missunderstanding* `misunderstanding′, *wonderfull* `wonderful′, *successfull* `successful′, *hugg* `hug′, *robb* `rob′, *developp* `develop′ and *att me* `at me′. There was no significant difference in the amount of words that were written this way between the groups we analysed.

Some words had an additional vowel in the word, the most commonly added ones being 'a' or 'e', e.g. *foreward* `forward′, *littele* `little′, *onily* `only′, *firiends* `friends′, *houres* `hours′, *layter* `later′, *pearson* `person′, *yealling*, `yelling′, *visite* `visit′, *cleaver* `clever′, *unfaire* `unfair′ and *calmes* `calms′. This seemed to be a typical mistake for the dyslexic students, since they had written 17 words with an additional vowel, whereas we found only 6 words with additional vowels in the non-dyslexic students' compositions.

We also found words with additional consonants that can not be explained by pronunciation *sudently* `suddenly′, *mynth* `myth′, *laught* `laugh′ and *enought* `enough′, *monther* `mother′ and *promisting* `promising′. We could not think of

any reason why the students had added an extra consonant for these words.

The silent 'k' at the beginning of a word has confused students to overgeneralise the use of it, e.g.. 'noticed' has been written *knotised* and 'know' as *know*. We found one example of these mistakes both in the dyslexic students' and comparison group students' compositions. The dyslexic students had written two words in which they had doubled the consonant within the word and placed it awkwardly e.g. *plalce* 'place' and *drirve* 'drive'. The percentages of mistakes are shown in Figure 18.

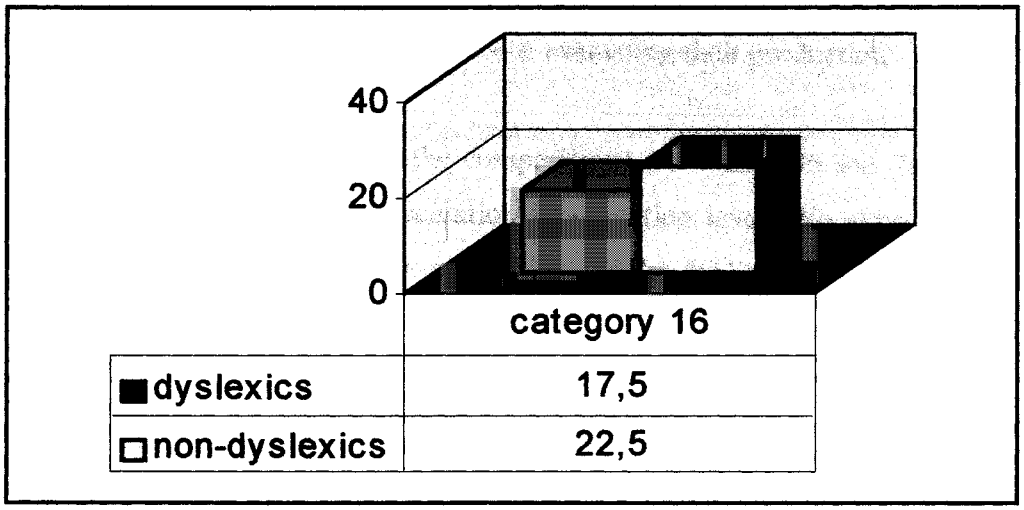


Figure 18. The percentage of mistakes in category 16 (additional letters and others).

7 DISCUSSION

As we stated in the introduction we had a very personal reason for doing our thesis on dyslexia. One of our personal aims was to gain as much information on this deficit as possible and to learn how to apply this knowledge to our work. In this we have definitely succeeded. We have gained a great deal of both practical and theoretical information on this subject. We feel much more confident confronting our dyslexic students now than we did before. A definite advantage to our students is that we can now detect dyslexia even in cases where it has remained unnoticed till now. We know that there are ways in which we can help our students with their difficulties and we feel more secure about evaluating their production.

When starting our analysis of the compositions we wanted to see how evident dyslexia was still on the Matriculation Examination level. We expected to find clear evidence of dyslexia in the productions of the dyslexic students and a clear distinction between the dyslexic group and the comparison group. We started our analysis by using Tolsa's list to categorise the mistakes we had found in the compositions and noticed that the only real difference was in the number of spelling mistakes. At this point we decided to concentrate on this difference and see if we could find any real evidence of dyslexia and used the list of dyslexic spelling mistakes by Ruoppila, Röman and Västi to do this.

The qualitative difference that we found between the two groups was that the mistakes the dyslexics had made divided more equally between the mistake categories whereas the non-dyslexics´ mistakes concentrated on certain mistake categories those being categories 5 (missing letter), 8 (wrong letter), 9 (mistakes in compounds), 10 (mistakes in punctuation) and 16 (additional letter and other mistakes). The mistakes in these categories covered 81 % of all the mistakes they had made. Another interesting thing was that there were seven categories where the non-dyslexics had practically made no mistakes (0 or 1 mistake), those categories being 1 (capital/small initial letter), 3 (missing letter in gemination), 4

(missing letter in long vowels), 6 (m/n confusion), 7 (ng-sound mistake), 11 (missing word) and 15 (missing syllable), whereas the dyslexics had only three of such categories those being the same with the non-dyslexics (categories 6, 11 and 15). Even though we said that the dyslexic mistakes had divided more equally between the categories, there were still five categories on which 70% of all the mistakes concentrated: 5 (missing letter), 8 (wrong letter), 9 (mistakes in compounds), 14 (non-word), and 16 (additional letter and other mistakes).

The clearest differences amongst all categories were in category one (1), capital/ small initial, category three (3), missing letters in geminations, and category fourteen (14), non-words. The mistakes in category one can be explained by the Finnish interference to which the dyslexic students seemed to be more vulnerable than the non-dyslexic students. The double letter mistakes (geminations and long vowels), however, are one of the most typical dyslexic mistakes, and therefore it is not surprising that the dyslexics had made more such mistakes. What is perhaps surprising is that the dyslexics had not made so many mistakes in category four (long vowels) compared to non-dyslexics. This can be explained by the few number of long vowel words in English. On the other hand, the difference of the percentages (7,5% and 0,8%) between the two groups in category three was noticeable, being the greatest amongst all sixteen categories.

In category fourteen (14), non-words the percentage of the dyslexic group was almost twice as high as the comparison group's. It seems the dyslexic students are not really aware of the phonological rules of the English language. They seem to have difficulties in finding the graphemes for the corresponding phonemes and therefore tend to write words as they would pronounce them. The words are a part of their active vocabulary, even if the students do not know how to write them correctly. They have perhaps learned these words using the auditive channel only, and the transfer into the visual form has not happened. We feel it is vital that attention is paid to pronunciation, but while teaching pronunciation more attention should be paid to the differences between the phonological and orthographical

forms of the words, thus also raising the phonological awareness of the learners, when the differences are pointed out more clearly and often enough .

It is clear that dyslexia is a severe handicap for many students who are taking the Matriculation Examination, and therefore it is vital that teachers are aware of this deficit. We would like to emphasise that it is important that the teachers of foreign languages and mathematics also recognise the symptoms of dyslexia, since it is often in these subjects, not in the students' first language that the deficit reveals itself at the upper-secondary level. We have come across second-year students at upper-secondary school whose severe dyslexia had gone unnoticed until their new foreign language teacher recognised it.

Attitudes to dyslexia still need improvement and the step towards this would be to provide teachers with more knowledge of the deficit and the depth of it. It seems that there is an overall light-heartedness toward dyslexia. If dyslexia certificates are too easily given out, this causes the real dyslexics to suffer, since their certificates are among all these others. We found it interesting, when gathering the material at the Matriculation Examination Board in Helsinki that some schools seem to have extremely many dyslexics, whereas other schools had none. There may be valid explanations for this, but we suspect some schools and/ or teachers try to get better grades for their students with dyslexia certificates, since in many of these cases the deficits were hardly noticeable. The zero number of dyslexia in some schools may simply be caused by the ignorance of the teachers who do not recognise dyslexia.

A committee on dyslexia was established on January 21, 1998. The main concern of the committee was to determine the present situation of the dyslexic students and to see if there were possible ways to improve the execution of examinations, e.g. in the Matriculation Examinations. The committee finished its task on March 2, 1999 and gave out a memorandum to the Ministry of Education and the Matriculation Examination Board in order to improve the conditions and status of

the dyslexic students among other already acknowledged handicaps. Based on this memorandum an amendment was presented by the Ministry of Education to the 1994 Matriculation Examination Statute. This was sent to schools in spring 2001 and will be enforced on May 1, 2001.

The new statute recognises dyslexia as a handicap and allows schools to make certain arrangements for those students, who have, first of all, been diagnosed having severe dyslexia and secondly, applied for the special arrangements. Both these terms must be fulfilled.

In order to get the special arrangements the student must be diagnosed as a severe dyslexic by two different professionals, a special education teacher or a speech therapist and a neurologist or a phoniatric. The dyslexia certificate, which is sent to the Matriculation Examination Board, is also signed by a native language teacher, a foreign language teacher and the students' parents. This certificate is obligatory for the student to be able to apply for the special arrangements.

The special arrangements that the schools are allowed to make for the student include extra time in written exams and listening comprehension exams. The Board may also supply special tapes for the listening comprehension tests in which the pauses are longer. The student need not write the native language examinations in ink, and therefore will have more time for the task itself. The student may also get a right to use a computer or a typewriter. The Board may also provide the student with examination papers where the text is enlarged. This new statute is certainly an improvement and the dyslexic students in upper-secondary schools will receive the attention that they need.

All in all, research on dyslexia at the moment is quite widespread, covering different aspects of the deficit. There are pedagogical approaches developing new remedial teaching methods and there are neuropsychological approaches that are still trying to pinpoint the actual causes of the deficit. What we would like to see,

however, is more studies done on how dyslexia affects second language learning in Finnish students. Foreign language learning is very important for Finnish students and since there are quite many students with learning difficulties (the number being as high as 20 % depending on the source), it is a shame that so little research has been done on this. For instance, the material available at the Matriculation Examination Board would provide possibilities to study dyslexia from different angles.

Even if we concentrated only on spelling mistakes, it does not rule out the fact that the deficit may have an effect on all the other areas of language competence, too. Therefore further studies also on the other parts (reading and listening comprehensions and the structure part) of the Matriculation Examination would be very interesting and might provide new evidence on how the dyslexic students handle the information. Our problem with the reading, listening and structure parts of the examination was the multiple choice questions for which we felt we should have had a much larger sample group than what we did. We felt that valid conclusions should not be drawn from the results of just fifty papers. The difficulty with multiple choice questions is that it is hazardous to try to interpret the choices the students have made. The compositions could also be approached in different ways than how we did. Grammatical structures as well as the information structures of the compositions could be a source of study.

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APPENDIX 1: COMPOSITION SPELLING MISTAKES IN CATEGORIES BY RUOPPILA, RÖMAN AND VÄSTI:

1. CAPITAL/ SMALL INITIAL LETTER

DYSLEXICS	NON-DYSLEXICS
Master -	
Servant	
the renaissance	
the second World war	
in english	
stoneage	
novemper	
wednesdaynight	
friday	
mother teresa	
pope	
prince charming	
finish	

2. REVERSAL/ ROTATION/ INVERSION

nucreal	for exampel
Whit	whitout
Frist	handel
Gril	
Thrid	
wareing	
beatuful	

3. MISSING LETTER IN GEMINATION

well-planed	stil
realy	
usualy	
litle	
inteligent	
sudently	
hapend	
posible	
woried	
presure	

DYSLEXICS	NON-DYSLEXICS
begining	
beging	
surender	
agressive	
finish	
conected	
proces	
useles	
posses	

4. MISSING LETTER IN LONG VOWELS

Soner	to (too)
Childhod	
vacum	
coffe	

5. MISSING LETTER

Beatuful	of coure
Sreamed	macines
Quetly	for examle
Individualisic	girlfried
Compaining	nowdays
Nowdays	friendy
Relly	buit
Politicans	on (one)
Belive	natur
Selfiness	dosn't
Trough	rase
Girlfried	suprise
Furtermore	happend
move (movie)	favourit
middle-age person	
natur	
sometime	
almous	
explaned	
frend	
intrested	
suprised	
stik	

DYSLEXICS	NON-DYSLEXICS
truble	
oder	
ment	
attitud	
tornados	
hapend	
each othe	
hitec	
discoverd	

7. NG-SOUND MISTAKE

learnig	somethink
evenig	
thinkin	
thing (think)	
thinks (things)	

8. WRONG LETTER

mere selfish	comforlable
wilhout	wilhout
expecially	live (life)
easaly	actyally
promesed	elder
eternety	liquer
beliave	microvaves
lycky	privilege
deceded	opportunaties
sosial	than
explened	lauges
games (comes)	cryes
stradegy	guite
deat (deal)	conserned
anpleasent	guickly
ather	technolocical
ingrease	of cource
anbeatable	elefants
nead (need)	carage
technologigal	desided
hause	swollow
siriously	knotised
mayby	hoppies

DYSLEXICS	NON-DYSLEXICS
dispite	weppon
perfektly	apolozice
instanse	hampurgers
musik	propably
appriciates	depate
tickits	expecially
a clock (o'clock)	rabitly
to discust	
quilte	
his mine (mind)	
it has wastet	
comblicate	
examble	
petray	
pack	
cabability	
broblem	
novemper	
desriped	
blame	
hom (him)	

9. MISTAKES IN COMPOUNDS

carindustry	ofcourse
carindustryrobots	littlesister
warindustry	somekind
enemymovements	warindustry
nuclearmissile	redwine
ever chainsing	agegroup
busstation	dailylife
stoneage	workages
wednesdaynight	everyone
nowone	everytime
atleast	out-dates
oldtimes	teenagecriminals
ten meters high	half-day
theirways	humanrelationships
aswell	over reacting
ofcourse	
lifeform	
lovestories	
may be	
with out	

DYSLEXICS	NON-DYSLEXICS
world wide	
a go	
some times	
a lovely-girl	
our selves	
all so	
sixty-years	
now a days	
to gether	
afterthat	

10.MISTAKES IN PUNCTUATION

Didint	peoples (people´s)
a clock	older peoples needs
get´s angry	one of my brother´s
fistfight´s	many fight´s
I´am	in (the) 20´th century
your lesson´s	your´s (yours)
our generations´	todays
peoples knowledge	cats
familys (family´s)	boyfriends (yks.)
peoples work	peoples
todays technology	technology (´s)
we are technologys servants	
eldest brother protection (brother´s)	
earths	

12.WRONG BUT MEANINGFUL WORD

meat (meet)	break (brake)
advice (advise)	loose (lose)
advises (advice)	affects (effects)
ones (in a while)	steel (steal)
sow (so)	
where (were)	
hole (whole)	
wright (right)	

13. WRONG WORD ENDING

DYSLEXICS	NON-DYSLEXICS
rageing	changeing
takeing	takeing
worryed	argueing
sayd	the house´s door
lovestorys	police´s car
everydays life	
my weekends plans	

14. NON-WORD

mapy	nodest
polisize	desisounds
weating	desisouns
laisy	quiqer
diel	dother
cofey	strait
anreblacable	relayable
tecniks	
sinsierly	
curfjue	
skrats	
alauens	
skear	
agen	
amboleavebull	
goinsident (coincidence)	
lounly	
enaf	
suspetious	
cicaret	
notis	
yeald	
a casenly	

15. MISSING SYLLABLE

Shamed	automaticly
polisize	

16.ADDITIONAL LETTER AND OTHER MISTAKES

DYSLEXICS	NON-DYSLEXICS
opinnion	matherialistic
didint	maschine
huntting	was shinning
foreward	is developping
littele	catastrophies
took acharge	cleaver
atendency	quaite
sudently	hugg
houres	promisting
mynth	usefull
thechnology	awfll
plalce	unfaire
onily	knotised
drirve	competite
firiends	equippment
yealling	calmes
pearson	allways
missunderstanding	allright
handeling	almoust
(ones in a) whiles	remainding
this explanes	allmost
know (now)	allready
relay (rely)	teatchers
beeing	foor
allready	appologies
allmoust	moust
allways	monther
all so	
layter	
succseed	
jusually	
eaven	
woun't	
wonderfull	
powerfull	
successfull	
att me	
buss	
robb	
developp	
to develope	
laught	
enought	
visite	

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APPENDIX 3: 1995 MATRICULATION EXAMINATION IN ENGLISH

YLIOPPILASTUTKINTOLAUTAKUNTA
STUDENTEXAMENSNÄMNDEN

A-TASO
NIVÅ A

29.3.1995

ENGLISH

WRITTEN PART

I READING COMPREHENSION

Read the two texts and then answer questions 1 - 20. Choose the best alternative for each item and mark your answers on the optical answer sheet ***in pencil.*** *Do not use a ballpoint or fountain pen.*

I a
Three Cheers for Technology — Maybe

Donald A. Norman is a well-known pioneer of cognitive science, which tries to understand and explain the workings of the mind. How does the mind work? What enables us to have thoughts and feelings, to decide what to do and how to act?

Professor Norman has written a number of learned books but in recent years he has been increasingly bothered by what he feels is a lack of reality in academic research. University-based research can be clever, profound, and deep, but according to Norman, surprisingly often it has little or no impact either upon scientific knowledge or upon society at large. University-based science is meant to impress one's colleagues. Whether the work has any relevance to broader issues is seldom addressed.

Norman claims that society has unwittingly fallen into a machine-centered orientation to life, one that emphasizes the needs of technology over those of people, thereby forcing people into a supporting role, one for which we are most unsuited. Worse, the machine-centered viewpoint compares people to machines and finds us wanting, incapable of precise, repetitive, accurate actions. This leads to continuing and growing frustration with technology.

Norman believes that it does not have to be this way. Today we serve technology. We need to reverse the machine-centered point of view and turn it into a person-centered point of view: Technology should serve us.

The good news is that technology can make us smart, in fact, it already has. The human mind is limited in capability. There is only so much we can remember, only so much we can learn. But we can invent things that make us smart. Three cheers for the invention of writing, reading, art, music, the development of logic, textbooks, encyclopedias, science and engineering.

1

The bad news is that technology can make us stupid. Things that make us smart can also make us dumb. For instance, television has the power to inform and entertain. Peer into the nation's living room in the evening and what do you see: bored masses glued to their television sets watching soap operas, commercials and news of the complex events of the world reduced to a few minutes per topic.

We humans have invented a wide variety of things to aid our cognition, some physical, some mental. Tools such as paper, pencils, calculators, and computers are physical artifacts that aid cognition. Reading, arithmetic, logic and language are mental artifacts, for their power lies in the rules and structures that they propose, in information structures rather than physical properties. But whether physical or mental, both types are equally artificial: they would not exist without human invention.

Norman maintains that much of our human intelligence results from our ability to construct artifacts. Yes, we humans have capable brains, but our brains are limited in power. But we, unique among all the animals, have learned how to overcome our limitations. We have invented tools that make us stronger than the unaided body would otherwise be, faster and more comfortable. Our inventions warm us, clothe us, and feed us. Our technologies also make us smart: they educate and entertain us.

But why are some of the artifacts of technological development thought to be beneficial, others not? Perhaps it is because technology has just developed by accident. That is, technology has not been planned, it just happened. It started off slowly, with the simple tools in the wild. As a result from the natural, unplanned development of tools came specialization in tool use and toolmaking. Each new advance in technology added to the powers and abilities of human society, each new advance also added to the amount of knowledge that newer generations would have to learn.

In the past, technology had to worry about fitting people's bodies; today it must fit people's minds. Because of the machine-centered view, the technology that is intended to aid human cognition and enjoyment more often interferes and confuses than aids and clarifies. People have to conform to the requirements of machines rather than the other way around: machines adapting to the requirements of people. This means that people appear in a bad light: they can concentrate on a task only for a short time, their spoken language does not follow the rules of grammar very well,

etc. By contrast, a machine has no concentration problems. A computer will keep doing its job even as the building burns down.

But perhaps it is the task that is the problem. Similarly, to say that people speak ungrammatically is to say that people do not speak the way our artificial grammars describe language. The same is true of rationality. To say that people often act illogically is to say that their behavior does not fit the artificial mathematics called "logic" and "decision theory". Yes, people do indeed err. Therefore, according to Norman, the technology should be designed to take this well-known fact into account.

Norman's goal is to develop a human-centered view of the technologies of cognition. His theme is not anti-technological, it is pro-human. Technology should be our friend in the creation of a better life; it should complement human abilities, aid those activities for which we are poorly suited, and enhance and develop those for which we are ideally suited. That, to Norman, is a humanizing, appropriate use of technology.

Consequently, Norman suggests that the motto of the 1933 Chicago World's Fair "Science Finds, Industry Applies, Man Conforms" should be transformed into a new motto for the twenty-first century "People Propose, Science Studies, Technology Conforms".

I b
Treachery Islands

When you drive along the narrow lanes and coastal roads of the Channel Islands today, you are constantly confronted by reminders of the Second World War — huge concrete bunkers, gun emplacements and look-out towers, evidence of Hitler's almost ridiculous obsession with these small British islands. For the Channel Islands were the only parts of the British Isles to be occupied by the Nazis, and the islanders the only British people faced with the accompanying physical and mental rigours.

Fifty years after the start of that occupation, the casual visitor is offered a wealth of information on the German presence; what calibre of guns were used, the precise German unit staying at each hotel and the fact that some 13,000 mines were sown on the tiny island of Sark. A major tourist industry has grown up around these war relics. One subject, however, is never discussed: collaboration.

Following the dramatic fall of France in 1940, the Germans occupied the Channel Islands almost as an afterthought in late June and early July. They arrived in a calm, ordered and almost bloodless fashion, and so set the tone for the next five years. The relationship between occupier and occupied was generally very good — some would say too good. The local authorities on Jersey, Guernsey and Sark were allowed to function as before, except that ultimate authority resided with the Germans. Although there was never enough food to eat during the occupation, the islands were spared the worst aspects of the war — they escaped any fighting and were rarely bombed.

Tony Faramus, born and bred in Jersey, now chooses to live on the mainland, in Surrey. When the Germans arrived, he already had a history of convictions for petty offences. A rebel by nature, it was not long after the start of the occupation that he was in trouble with the police again, but this time he was deported to the Continent, where he spent nearly three years in nine different Nazi prisons, including Buchenwald and Mauthausen concentration camps. He is convinced that two members of the island police force collaborated with the German occupiers in order to have him deported as an 'undesirable'.

His is not an isolated case: Louisa Gould and her brother were both informed on by a neighbour and were arrested for sheltering an escaped Russian prisoner of war. Mrs Gould died in Ravensbrück, while her brother ended up in Belsen. Similarly, Canon Cohu and 18 of his parishioners were arrested on an informer's tip-off; Canon Cohu died in Spergau concentration camp. On Guernsey it was a similar story: people were betrayed for distributing underground news-sheets. A few died in prison.

Much of the informing was done by mail, with anonymous letters. It was used as a means of settling scores, both old and new — such was the nature of island life and few people really understood the consequences for those informed on. The Germans themselves were surprised at the willingness of some people to denounce their neighbours so readily. A German officer is reported to have said: 'All I have to do is open my mail in the mornings and that gives me a lot of information.'

On Jersey, perhaps the most notorious informer of all was Eugenie Baudains, otherwise known as 'Mimi the Spy', who became very friendly with a senior German officer and this resulted in several

arrests. After the war, she was forced to ask for police protection, and to flee the island to escape angry islanders. Even today, the local newspaper will not release photographs of her hurried departure, so strong is the desire to forget.

The island authorities were accused by many of being too co-operative with the Germans. Before the invasion, they had been told by Whitehall that it was their duty to stay on, and in general they did what they thought was best for the islanders, trying to prevent the Germans taking over all the reins of government. Nevertheless, certain allegations are hard to deny: the registering of anti-Jewish laws, for example. As in the rest of Europe, Jewish businesses were closed and their assets seized. The Jersey authorities even instructed their aliens officer to investigate the possible Jewish backgrounds of various people.

The Guernsey authorities have always refused access to their wartime files, and so a detailed assessment of their activities is difficult. Following the liberation in May 1945, there was an investigation into allegations of collaboration, with a view to possible prosecutions. Feelings were running very high in the islands and there were calls from many quarters for a public inquiry. As a young girl, Stella Perkins witnessed the tarring and feathering of a woman who had had a German boyfriend: a Jerrybag, as such women were called. There were several other such incidents and British troops had to be called in to restore order.

At the time, there seemed to be a genuine willingness to bring these people to justice, although some islanders were a little more sceptical. When intelligence officers were collecting evidence against collaborators they were told, rather cynically, that it would all be filed away and forgotten. Forty-five years later, those files are still closed to public scrutiny.

Time dragged on and the islands were left to themselves again. As pressure mounted Jersey appointed a special committee to look into the problem. It reported back in February 1946 that it was 'satisfied that all cases have been thoroughly investigated' and that it did 'not recommend that any further action in this matter should be taken', the argument being that there was not the right legal machinery to deal with any alleged acts of collaboration.

The 1939 Defence Regulations concerning traitors in the UK were not applicable to the Channel Islands. The only laws under which

islanders could be tried for collaboration were the Treason and Treachery Acts, both of which carried a mandatory sentence of death. This was thought to be too much of a sledgehammer to crack this particular nut, and so the cases were quietly dropped.

No one in authority, whether in Whitehall or in the islands, was anxious to instigate a public inquiry, for to do so might bring into question the whole system of government in the islands and how it had fared during the occupation. As it was, the authorities in Jersey and Guernsey were facing mounting pressure for democratic reforms to their outdated constitutions. Anything more might have brought the whole feudal structure tumbling down.

Collaboration in the Channel Islands was never on a scale comparable to that of France. Nevertheless, crimes were committed and went unpunished. For some who suffered or whose relatives died in camps in Germany the memories are still very painful, made even more so by the fact that those who caused so much pain were allowed to get away with it, and to prosper. That may not satisfy our sense of equal justice but Joe Berry, a Jersey policeman during the occupation, sums it all up very well: 'I know a lot of people now who were collaborating very heavily but it was a long time ago. People have forgotten it, you know. They accept it now.'

II READING COMPREHENSION

Lue seuraava teksti ja vastaa sen pohjalta omin sanoin lyhyesti ***suomeksi*** *sivulla 13 oleviin kysymyksiin a - e. Kirjoita vastaukset* ***muste- tai kuulakynällä*** *(ei lyijykynällä) erilliselle vastauslomakkeelle.*

Läs följande text och ge sedan ett kort svar ***på svenska*** *på frågorna a - e på sidan 13. Använd egna ord och skriv med* ***bläck- eller kulspetspenna*** *(inte blyertspenna) på en särskild svarsblankett.*

Feeding Fundamentalism

A generation ago, many experts, including some theologians, were predicting the death of God. As society became more urban and more industrial it would become less religious; social behaviour would be based upon secular notions of the public good, not on divine commands. Now, as the third millennium AD approaches,

such assumptions lie in ruins. From Waco, Texas, to Ayodhya in India, from Bosnia to Kashmir, religious identities, charismatic cults and fundamentalist movements break through the thin veneer of modernity. Far from being near death, God has made a comeback — and it is clear He is concerned with more than the state of people's souls. Religious enthusiasts are challenging the social order, even competing for political power.

What happened? Scholars offer many learned explanations. One that they largely neglect is the impact of audio-visual technology. The magic power of the oral word and the concrete message conveyed by the visual icon are displacing the written word — and the mental habits of rational discourse supported by it.

The spoken word, as people such as the late Marshall McLuhan began to remark in the 1960s, pours into the hearer from all directions. Whereas print isolates individuals, enabling rational, dispassionate analysis, spoken words encourage group-thinking, sometimes mob-thinking.

God officially returned to the public stage with the Iranian revolution in 1979. Ayatollah Khomeini reached his followers, many of whom were illiterate, by means of audio-cassettes taped from his lectures and pronouncements, and copied by the thousand. Audio-cassettes are now used widely by religious leaders in or from the Middle East, including Sheikh Omar Abdul Rahman, the Egyptian fundamentalist whom the Americans are trying to deport back to Egypt.

In earlier times, government control of transmitters made radio an instrument that boosted dictators. But the cassette can be used by anybody with a tape recorder. And when the oral word echoes with sacred resonance, as it often does in the Middle East, it can be a powerful instrument of religious politics.

Tape recorders are now being overtaken in turn by television and by videotapes, combining vision with sound. McLuhan wrongly believed that television was a "cool" medium in which the visual engagement of the viewer with the screen would counteract the "hot" or emotive impact of sound. The opposite is true: a 20-second sequence, captured by amateur video, of a black motorist being beaten up by Los Angeles policemen, followed by the officers' acquittal, led to America's worst riots in 20 years. The moving image, subject to nightly repetitions as the legal process ran its course, proved far more powerful than any evidence presented in court.

255 Images and icons have always been an effective way
communicating the idea of the holy. In many traditions, religio
icons are vested with sacred power. Television and video are tl
new carriers of images, though, just as in pre-electronic days, tl
force of the image depends on the viewer's cultural backgroun
260 People read television images according to what they alrea
think. A person will have his beliefs strengthened, he is unlike
to be converted.

The images of "Baby Choice" — an aborted fetus repeated
exhibited on the 700 Club, a fundamentalist talk-show run by P
265 Robertson in the United States and broadcast all over the world
are more effective than any argument based on theology or mor
philosophy seeking to prove that abortion is murder. Similarl
news flashes of "Operation Rescue" (anti-abortion activists bei
arrested by policemen) are used to demonstrate more effective
270 than any fundamentalist rhetoric can that the America
government is under the control of "Satanic" forces, and that tl
anti-abortion activists are "Christian martyrs".

In the Indian subcontinent the impact of television has proved
divide people, as images of religious violence are shown on T
275 The evolution of the recent temple-mosque dispute at Ayodh
from a local matter to a national crisis in Hindu-Muslim relatio
coincided with a massive expansion in the availability of televisi
and the ending of the Indian government's carefully manag
news monopoly.

280 The BBC's world television news — well followed in India
offered coverage of the destruction of the mosque in December th
was a model of balanced reporting, with Mark Tully explaining
English why the police were unable to act because of the densi
of the crowd. But the succession of images caught by the camer
285 culminating in the triumphant invasion of the mosque by Hin
hooligans, told a different story. The pictures, more lasting th
the sound, act as recruiting banners for militants on both sides

Literate elites may continue to run the world: mode
technological societies cannot survive without them. B
290 increasingly the pressures to which they are subjected a
generated by the audio-visual media, and often electronical
recorded voices are claiming to speak for God.

I a
(lines 1 - 36)

1. What does Professor Norman say about academic research?
   A It's often quite cut off from everyday life
   B It has a lot to say about the human mind
   C It's clever but hard to understand
   D It has led to impressive discoveries

2. What has happened to technology?
   A It has begun to dominate people
   B It has made comparisons between people more precise
   C It has forced people to think of their basic needs
   D It has taken over tasks that are unsuited to people

3. How does technology affect our lives?
   A It helps us use and control nature
   B It informs and entertains us in many ways
   C It has both good and undesirable consequences
   D It helps even stupid people to act intelligently

(lines 37 - 61)

4. What is meant by 'artifacts'?
   A They are tools used in physical work
   B They are things created by people
   C They are new products of information technology
   D They are unrealistic things

5. Why does Prof. Norman find artifacts needed and useful?
   A We couldn't exist without them
   B Their development is not limited by moral problems
   C Many tricky daily problems are revealed thanks to them
   D They help us go beyond our normal capacities

6. How can the development of technology be characterized?
   A It has been extremely rapid
   B A controlled start has been followed by a lack of planning
   C It has been largely spontaneous
   D It has led to many unexpected accidents

(lines 62 - 80)

7. Why are many people frustrated with technology?
   A It cuts people off from human contacts
   B It demands continuous quick decisions
   C It often makes people seem incompetent
   D It requires good physical fitness

8. What is Prof. Norman's view of human abilities?
   A They are unfairly belittled
   B They are worth admiration
   C They are too poorly known
   D They are weak compared with machines

(lines 81 - 92)

9. What is Prof. Norman's attitude towards technology?
   A It should be a servant to mankind
   B It should imitate human abilities
   C It should be better suited to poor countries
   D It should have less ambitious goals

10. What is the main point about Prof. Norman's new motto?
   A It uses different words
   B It puts people in the centre
   C It is 60 years since the old motto was created
   D It is time to arrange a new World's Fair

I b

(lines 93 - 118)

11. What is the current situation with regard to the German occupatio of the Channel Islands?
    A It is considered a ridiculous event
    B It is a hardly remembered episode
    C It has led to interesting forms of co-operation
    D It has become a tourist interest

12. What is perhaps a little surprising about the occupation?
    A The violent manner of the invasion
    B Life continued without dramatic changes
    C The local authorities arranged it to avoid bloodshed
    D The fact that there was some lack of food

(lines 119 - 144)

13. What is common to Tony Faramus, Louisa Gould and her brother, Canon Canu and several others?
    A They all lost their lives in concentration camps
    B They were isolated cases of the occupation's victims
    C They were informed on, imprisoned and suffered tremendousl
    D They were the innocent victims of informers among the police

14. How did the Germans often get hold of their victims?
    A They often received tips from local people
    B They had an efficient spying system
    C Discovered news-sheets revealed many interesting secrets
    D It was impossible to hide anything on small islands

(linès 145 - 172)

15. What does the text suggest about the Channel Island women?
    A Some of them had to pay hard for their behaviour
    B Most of them shamefully betrayed their husbands and boyfrien
    C Most of them really deserved to be tarred and feathered
    D Many were allowed to escape a certain death sentence

16. What unpleasant fact has been discovered about the conduct of the local authorities?
    A Their anti-British attitudes
    B They did everything they could to please the occupiers
    C They did not actually welcome the liberation
    D Their actions against Jews

17. What happened after the occupation was over?
    A Things went back to normal very soon
    B British troops decided they needed to stay on the islands
    C Anti-Jewish attitudes soon diminished
    D Many were angry and demanded a full investigation

(lines 173 - 208)

18. How have the British and local authorities behaved?
    A They have spent years in collecting all relevant evidence
    B They have publicly announced that the case is closed
    C They haven't wished to disclose everything and act accordingly
    D They are still considering what is the best action to take

19. How is the authorities' action to be explained?
    A They didn't wish to upset the current system
    B They knew that the truth could never be discovered
    C Collaboration was not that serious at all
    D They thought that there was no point in condemning people

(a question based on the whole text I b)

20. What seems to be the author's attitude towards the wartime and postwar events on the Channel Islands?
    A Access to wartime files should be open
    B Things could have been much worse
    C It is wrong to allow guilty people to get rich
    D Wrongdoers should be strongly punished

II

(lines 209 - 243)

a. Mitä ennustettiin ja mitä itse asiassa tapahtui?
Vad förutspåddes och hur gick det i själva verket?

b. Mikä ero on puhutulla ja kirjoitetulla sanalla?
Vilken är skillnaden mellan det talade och det skrivna ordet?

c. Miksi juuri ääninauhoja käytettiin Iranin vallankumouksessa?
Varför användes just ljudband i den iranska revolutionen?

(lines 244 - 292)

d. Missä kahdessa kiistakysymyksessä television vaikutus on näkynyt voimakkaana Amerikassa?
Vilka två tvistefrågor har televisionen haft stort inflytande på i Amerika?

e. Mitkä *uutistoimintaan* liittyvät seikat vaikuttivat siihen, että Ayodhan kiista kärjistyi sekä paikallisesti että valtakunnallisesti?
Vilka faktorer i anslutning till *nyhetsförmedlingen* bidrog till att skärpa konflikten i Ayodha, nationellt och lokalt?

III GRAMMAR AND VOCABULARY

Read the text carefully and for each item choose the alternative that best fits the context. Mark your answers (21 - 60) on the optical answer sheet in pencil. Do not use a ballpoint or fountain pen.

When 1+4 = Less Than 3

English cricket is not what it used to be. But then, was it ever?

"Another damned fat book, eh, Mr Wisden?" Another English spring has damply arrived, and __21__ have begun another cricket season, reminding themselves yet again that __22__ created the world's most civilised form of sport. They also created "Wisden", __23__ after the man who in 1864 founded the best-known annual of cricket. Other sports have __24__ famous writers — Bernard Malamud (baseball), Henri de Montherlant (bullfighting), Joyce Carol Oates (boxing). Cricket has __25__ one or two good novels, some marvellous journalism, and "Wisden".

"Wisden" is widely hailed as the cricketers' bible, __26__ it has barely progressed beyond Chronicles (the match reports) and the Book of Numbers (the records section). Cricket, an old and complex game, naturally __27__ statistical analysis. But __28__ a certain English indifference about some of the statistics, which is shown by the fact that some obvious errors went uncorrected for a long time.

This year the record section of "Wisden" acquires a new interest. __29__ period of

21 A English
B England
C the English

22 A themselves
B thanks to them
C it was they who
D there were those wl

23 A name
B naming
C named
D has named

24 A appealed
B attracted
C invited
D offended

25 A taken
B given up
C proceeded
D given rise to

26 A or
B and
C but
D since

27 A checks out
B agrees on
C satisfies
D lends itself to

28 A it is still
B it is yet
C there is still
D there is yet

29 A A
B An
C The
D -

English cricket history has come to an end, and a new one has started.

It is deeply unlikely that any batsman __30__ 3,000 runs in first-class matches in an English season, as 28 batsmen __31__ between 1899 and 1961. No bowler may ever again take 200 wickets. It is __32__ whether anyone will again do the double of 1,000 runs and 100 wickets, achieved only twice __33__ 1967.

Why? Partly __34__ the invention, in 1963, of the one-day county game. Cricket in the 20th century has __35__ large crowds only in the aftermath of the two world wars; after such horrors, people __36__ the spiritual balm of this most philosophic of games. By the 1960s the cricket authorities __37__ wanted a better crowd-drawer than the old three-day games between counties that make up the county championship. (Needless to say, __38__ an English sport, only a minority of England's counties __39__ the championship — and, until very recently, none of the majority could ever hope to force its way in.)

30 A ever scores
B will ever again score
C never again scores
D will never again score

31 A do
B did
C are
D have

32 A probable
B doubtful
C reasonable
D scarcely

33 A from
B at
C since
D on

34 A with reason
B in case of
C in the course of
D because of

35 A pulled in
B pulled up
C pulled down
D pulled through

36 A felt
B needed
C rejected
D fought

37 A ,therefore,
B ,nevertheless,
C despite
D even

38 A this is
B this being
C this has been
D this is being

39 A take part in
B admire
C agree to
D belong to

The first one-day-game tournament was an immediate __40__, and the habit spread. __41__ a result the number of three-day games declined, from 26 per county per year in the late 1940s to 20 in 1972. Since one-day cricket does not count as first-class stuff — quite rightly, in the view of growling conservatives — there are no longer enough playing days for a man to pile up those 3,000 runs or those 200 wickets.

40 A success
B victory
C benefit
D advantage

41 A As
B In
C For
D By

The other cause of the upheaval, which sounds the exact opposite of the first, is the arrival of the four-day game. The essential source of income for English cricket __42__ the five-day 'test match' against other cricket-playing countries; 'tests' still bring in big crowds, and __43__ they earn helps the financially struggling country teams. But England has not done well in test matches __44__ — partly, the experts say, because __45__ one-day __45__ three-day games are a proper preparation for five-day tests.

42 A stays
B keeps
C remains
D holds

43 A money
B the money
C moneys

44 A briefly
B frequently
C commonly
D lately

45 A either - or
B both - and
C neither - nor
D not only - but

Enter the four-day county championship match, which this season becomes the __46__. A century of three-day games is over. Each county will play 17 four-day matches. But each match will still __47__ just two innings per side, so the chance of huge totals of wickets taken or runs scored by individual players during the season is further __48__.

46 A norm
B mean
C average
D regularity

47 A consist of
B compromise
C carry out
D take place

48 A diminished
B cut out
C come down
D forsaken

The editor of "Wisden" regrets the emergence of two radically different kinds of cricket. __49__ But there is another sense in which cricket __50__ two separate games even during its 19th century and early 20th-century prime.

49 A It is right.
B It serves us right.
C It is alright for him.
D No doubt he is right.

50 A is
B was
C were
D has been

__51__ the first one-day tournament took place, 1962, __52__ the end of the distinction between amateur and professional cricketers, between gentlemen and players. It had long been absurd.

51 A The year before
B In the year before
C Before the year
D By the year

52 A saw
B found
C sounded
D seemed

"Wisden" __53__ bore witness to the cult of the amateur. Well into the 1930s the section on cricket at public (meaning private) school preceded all other match reports. The same influence __54__ in its early-20th-century chat-pieces, trumpeting cricket's __55__ in strengthening the bonds of Britain's empire.

53 A self
B itself
C himself
D themselves

54 A will find
B can see
C seems
D could be seen

55 A play
B role
C imagination
D stage

Some English cricket-lovers __56__ see the end of the amateur as the end of one graceful aspect of county and test cricket. (The local game, in villages and suburbs, is still almost wholly amateur.) Others will tell you that it showed cricket's ability to absorb change, an ability it now has __57__ chance to demonstrate. Still others being English, feel both things at the same time.

56 A yet
B still
C currently
D continuously

57 A other
B another
C the other
D the other's

__58__ crowds mean money, the rulers of cricket have never been quite happy about them. When Warwickshire unexpectedly won the county championship in 1911, the number of people __59__ to see its matches doubled. This did not please "Wisden": "Such sudden enthusiasm", it wrote," __60__ rather too much the spirit of Association Football."

58 A Although
B However
C In spite of
D Irrespective of

59 A come
B to come
C coming
D was coming

60 A prefers
B corresponds
C doubles
D suggests

IV COMPOSITION

Write a short composition of between 150 and 200 words on one of the following themes using either a ***ballpoint*** *or* ***fountain pen****. Do not use a pencil.*

1. Us — Selfish?

Young people are usually accused of being selfish. How true is it? Is it true even today?

2. Technology — Master or Servant?

3. How to Deal with an Angry _____

Choose a person (parent, teacher, friend, boyfriend, girlfriend...) and describe what you do when he/she is angry. Write the full title.

4. It All Started as a Harmless Joke

KOKEEN PISTEITYS/POÄNGSÄTTNINGEN AV PROVET

				Enint. Max.
Ia - Ib	20 x	1/0 p.	x 2	40 p.
II	5 x	3-0 p.	x 2	30 p.
III	40 x	1/0 p.	x 1	40 p.
IV				99 p.
			Yht./Tot.	209 p.

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Ylioppilastutkintolautakunta
Studentexamensnämnden

Kirjoitelmiin liittyviä virhetyyppejä

Mirja Tolsa Opetushallitus 3. 10. 98

1. Kirjoitelma ei kommunikoi ollenkaan. Peräkkäin väärinkirjoitettuja sanoja, sanaluokat sekaisin, ajatus menehtyy eikä välity viesti.

Esim. mobile phone is great thing what someone people so were has in word maid

2. kongruenssi

Subjekti ja predikaatti eri luvussa

People tells/ peoples is/ Humen is/ everybody are/ an animals is
There rakenne sotkettu it rakenteeseen

3. Verbien käyttö virheellistä ja horjuvaa

Aikamuodot – kestomuotojen ylikäyttö
Esim Mr Pols is working in his office every day
I'm sitting and speaking in my car to my phone every day

Verbi sekaisin I travelling alone

Kysymyslauseet – do you heard did you heard
Epäsuorat kysymykset väärä sanajärjesty ja do-apuverbi

Kaksoiskielto nobody don't know nothing

Passiivin käyttöä ei hallita

Konditionaali if lauseissa väärin

Futuuri tuntematon

4. Substantiivit

Yksikkö ja monikko väärin

Heikko sanaluokan tunnistus safe-safety different-difference invite-invitation

Genetiivi – liiallinen s-gen käyttö, liikaa heittomerkkisanoja ilman järkeä

Heittomerkkien ylikäyttö/ väärinkäyttö it's boy's her's

5. Pronominit

Pronominien it they people liikakäyttöä tietämättä mihin viitataan. Toinen pronomini virheitä:

anothers eachothers other-other

you-we-they-people-persons subjektina samassakin lauseessa

6. Artikkelit

Useimmiten jätetään systemaattisesti pois

A an myös monikon edessä

A ja the sotkemista

Artikkelin paikka sellainen so

7. Prepositiot

Tavalliset verbit THINK LOOK SPEAK TELL SAY HORJUVAA KÄYTTÖÄ

SAMOIN go laugh CONSIDER

Adjektiivit interested afraid different similar fond

Sanontatavat ajanmääreet in on at

8. Oikeinkirjoitusvirheitä

BILL – PILL
THINK – THING
GROW – CROW
SENT – SEND
FAKT –FACT
WHICH – WITCH
SUCCES – SUCCESS
SIGFHT – SIGHT
FOR EXAMPEL – FOR EXAMPLE
DEFINATELY – DEFINITELY
PROPABLY – PROBABLY

9. Epäaitouksia

Opeteltuja fraaseja jotka eivät sovi yhteyteen; sanontatapoja joiden merkitystä ei ymmärrä

10. Itse keksittyjä sanoja

A monotoninen pelkkiä päälauseita

Runsaasti pronomineja

And-lauseita

Epäloogisuuksia

Toistoa

Otsikon kopiointia tai ohjauksen toistoa

Rekisteri väärä

Turhan vakava

Ei oman tuotoksen tuntuinen

Aivan aiheen vierestä ennen opetellun tuntuinen

Only a miracle will save me !!!!!

APPENDIX 5: YLIOPPILASLAUTAKUNTA 1991

Viite
Ref.

Asia
Ärende

Luku- ja kirjoitushäiriöiset kokelaat ylioppilastutkinnossa

Rehtoreille ja lukion opettajille

Todistus lukihäiriöstä

Jos ylioppilaskokelaalla on lukihäiriö, siitä on hankittava lausunto asiaan perehtyneeltä erityisopettajalta, opettajalta, psykologilta tai lääkäriltä. Lausunto on kirjoitettava lautakunnan laatiman mallin mukaiseen lomakkeeseen. Arvioinnin yhteismitallisuuden ja oppilaiden oikeusturvan vuoksi on tärkeätä, että lomakkeeseen täytetään kaikki pyydetyt tiedot. Lausunto tai sen oikeaksi todistettu jäljennös lähetetään lautakuntaan tutkinnon jälkeen korjaus- ja täydennysluettelon mukana. Koesuoritusten mukaan ei liitetä lausunnon jäljennöksiä, vaan opettaja merkitsee selvästi koepaperin ensimmäisen sivun yläreunaan, että kokelas on lukihäiriöinen. Merkintä tehdään kaikkiin kirjallisiin tuotoksiin.

Koesuoritusten arvostelu

Opettajat arvostelevat koesuoritukset ja merkitsevät antamansa pistemäärät koepapereihin ja arvostelulomakkeisiin ottamatta huomioon lukihäiriötä. Näin menettelevät myös lautakunnan sensorit. Vasta tulosten valmistuttua lukihäiriöisten kokelaiden saamat arvosanat käsitellään ylioppilastutkintolautakunnan lukivaliokunnassa, jonka jäseninä on lukihäiriön ja eri aineiden asiantuntijoita. Arvosanan nostamista harkittaessa otetaan huomioon kokelaan häiriön vaikeusaste, sensorin arvio häiriön vaikutuksesta koesuoritukseen sekä kokelaan saaman pistemäärän ja seuraavan arvosanan välinen piste-ero. Arvosanamuutos on mahdollinen vain yhdessä kokeessa. Myös sellaisten kokelaiden suoritukset käsitellään lukivaliokunnassa, jotka sensori on havaintojensa perusteella arvioinut lukihäiriöiseksi.

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APPENDIX 6: YLIOPPILASLAUTAKUNTA 2001

Määräys
Päivämäärä 16.2.2001

LUKU- JA KIRJOITUSHÄIRIÖISET KOKELAAT

Ylioppilastutkintolautakunnan määräys rehtoreille ja opettajille

Määräys koskee ensimmäisen kerran syksyn 2001 ylioppilastutkinnon toimeenpanoa.

Luku- ja kirjoitushäiriöiset kokelaat

	sivu
1. Luku- ja kirjoitushäiriön huomioon ottaminen ylioppilastutkinnossa	1
2. Lukihäiriön vaikeusaste	1
3. Tarvittavat lausunnot	1
4. Koetilanteen erityisjärjestelyt	1
5. Erityisjärjestelyjen hakeminen	2
6. Koesuoritusten arvostelu lukiossa ja ylioppilastutkinnossa	2
7. Lukilausunnon vaikutus arvosanaan	2
8. Ylioppilastutkintoon ilmoittautuminen	3
9. Lausunnoista korjaus- ja täydennyslomakkeeseen tehtävä merkintä	3

1. Luku- ja kirjoitushäiriön huomioon ottaminen ylioppilastutkinnossa

Jos ylioppilaskokelaalla on lukihäiriö ja kokelas tai hänen huoltajansa haluaa, että lukihäiriö otetaan ylioppilastutkinnossa huomioon, hänen tulee hankkia asiasta lukihäiriötä koskeva selvitys. Se toimitetaan lautakunnalle ilmoittautumisen yhteydessä.

2. Lukihäiriön vaikeusaste

Lukihäiriön vaikeusaste luokitellaan ylioppilastutkintolautakunnan ohjeissa asteikolla 0 - 5 (0 = ei häiriötä, 5 = erittäin vaikea häiriö). Jos lukihäiriö on keskivaikea tai vaikea (vaikeusaste 3 - 5), kokelas voi hakea koetilanteen erityisjärjestelyjä. Lievissä lukihäiriötapauksissa (vaikeusaste 1 - 2) kokelas voi saada vain yhden arvosanan korotuksen rajatapauksessa kokeiden lopullista arvosanaa päätettäessä. Mikäli keskivaikeasta tai vaikeasta lukihäiriöstä kärsivä kokelas ei hae erityisjärjestelyjä, hänkin voi saada vain yhden arvosanan korotuksen rajatapauksessa.

Lukihäiriön ollessa keskivaikea tai vaikea, häiriö otetaan ylioppilastutkinnossa huomioon ensisijaisesti koetilanteen erityisjärjestelyin. Tavoitteena on, että lukihäiriöistä kokelasta autetaan erityisjärjestelyillä eikä arvosanamuutoksella. Tämä vastaa paremmin opiskelussa ja työelämässä vallitsevia käytäntöjä.

3. Tarvittavat lausunnot

Koetilanteen erityisjärjestelyjen edellytyksenä on, että kokelas on saanut lukilausunnot kahdelta lausunnonantajalta. Toisen lausunnonantajan tulee olla koulutuksen saanut erityisopettaja, asiaan perehtynyt psykologi tai puheterapeutti. Lausunto on kirjoitettava lautakunnan laatimaan lomakkeeseen (ks. liite 1), ja se voi olla peruskoulun 9. luokalla tai lukioaikana hankittu. Toisen lausunnonantajan tulee olla erikoislääkäri, yleensä lastenneurologi, neurologi tai foniatri. Lausunto on kirjoitettava lautakunnan laatimaan lomakkeeseen (ks. liite 2), ja sen tulee olla lukioaikana hankittu.

Mikäli keskivaikeasta tai vaikeasta lukihäiriöstä kärsivä kokelas ei hae erityisjärjestelyjä, riittää yksi asiantuntijalausunto (erityisopettaja, psykologi tai puheterapeutti). Samoin lievistä lukihäiriöistä kärsiviltä kokelailta vaaditaan myös em. yksi asiantuntijalausunto.

Arvioinnin yhteismitallisuuden ja kokelaiden oikeusturvan vuoksi on tärkeää, että lausuntolomakkeisiin merkitään kaikki pyydetyt tiedot.

Lausuntojen hankkimiseen tulee ryhtyä riittävän ajoissa, jotta hakemus voidaan lähettää lautakunnalle silloin, kun kokelas ilmoittautuu tutkintoon.

4. Koetilanteen erityisjärjestelyt

Keskivaikean tai vaikean lukihäiriön perusteella lukio voi hakea kokelaalle erityisjärjestelyjä tutkinnon suorittamista varten. Kyseeseen tulevia järjestelyjä ovat lukihäiriön vaikeuden ja luonteen mukaan esimerkiksi lisäaika kirjallisessa kokeessa, lisäaika kuullunymmärtämiskokeessa,

pitkätaukoinen kuullunymmärtämiskokeen äänite, vapautus äidinkielen kokeen puhtaaksi kirjoittamisesta musteella tai kuulakynällä, isokirjaimiset tehtävät ja oikeus käyttää vastausten kirjoittamiseen tietokonetta tai kirjoituskonetta. Tietokoneen käyttö edellyttää, että kokelaalle varataan erillinen tila, johon on järjestetty valvonta. Lisäksi on varmistettava, että tietokoneen muistissa ei ole ylimääräisiä tiedostoja tai ohjelmia ja että tekstinkäsittelyohjelmasta on poistettu oikeinkirjoituksen tarkistus. Suurennuslasin tai lisävalaisimen käyttöön ei tarvitse hakea lupaa lautakunnalta.

Koejärjestelyistä vastaa lukion rehtori tai hänen määräämänsä henkilö. Lautakunta teettää ja lähettää lukioille koetehtävät, esimerkiksi isokirjaimiset tehtävät ja pitkätaukoiset kuullunymmärtämiskokeen äänitteet. Lukiolla ei ole oikeutta suurentaa kirjaimia tai tauottaa nauhoja.

5. Erityisjärjestelyjen hakeminen

Erityisjärjestelyjä haetaan kirjallisesti lautakunnalta mikäli mahdollista viimeistään silloin, kun kokelas ilmoittautuu tutkintoon. Hakemus kirjoitetaan lautakunnan laatimaan lomakkeeseen (ks. liite 2).

Hakemukseen liitetään kahden asiantuntijan antamat lukihäiriölausunnot. Lukion hakemuksesta on myös aina käytävä ilmi, että opiskelijaa on asiassa kuultu sekä alle 18-vuotiaan opiskelijan ollessa kysymyksessä myös huoltajaa on kuultu.

Erityisjärjestelyjä ei tarvitse erikseen hakea joka kerta kokelaan ilmoittautuessa tutkintoon, jos lukihäiriö on pysynyt ennallaan. Lukion tulee kuitenkin tällöin lähettää lautakuntaan ilmoittautumistietojen mukana päätöksen kopio, jotta tiedettäisiin varautua tarvittaviin järjestelyihin, kuten pitkätaukoisten kuullunymmärtämiskokeen äänitteiden tai isokirjaimisten tehtävien teettämiseen.

6. Koesuoritusten arvostelu lukiossa ja ylioppilastutkintolautakunnassa

Opettajat arvostelevat lukihäiriöisten kokelaiden suoritukset yleisten arviointikriteerien mukaan ja merkitsevät antamansa pistemäärät koesuorituksiin ja arvostelulomakkeisiin. Näin menettelevät myös lautakunnan sensorit.

7. Lukilausunnon vaikutus arvosanaan

Lautakunnan lukivaliokunta, jonka jäseninä on lukihäiriön ja eri oppiaineiden asiantuntijoita, käy läpi lievästä lukihäiriöstä kärsivien kokelaiden lausunnot sekä ne keskivaikeasta tai vaikeasta lukihäiriöstä kärsivien kokelaiden lausunnot, joiden perusteella ei ole haettu erityisjärjestelyjä, ja tarkistaa tulosten valmistuttua näiden kokelaiden saamat arvosanat. Arvosanan nostamista harkittaessa otetaan huomioon kokelaan häiriön vaikeusaste ja hänen saamansa arvosanan ja seuraavan arvosanan välinen piste-ero. Arvosanamuutos on mahdollinen vain yhdessä kokeessa, jos pistemäärä sijoittuu lähelle ylempää arvosanaa.

Jos kokelas on saanut koetilanteessa erityisjärjestelyjä, lukilausunto otetaan jälkikäteen huomioon vain poikkeustapauksessa lopullista arvosanaa määrättäessä.

8. Ylioppilastutkintoon ilmoittautuminen

Lausunnot tai niiden oikeiksi todistetut jäljennökset ja hakemus on mikäli mahdollista toimitettava lautakuntaan ilmoittautumistietojen yhteydessä. Koesuoritusten mukaan ei liitetä lausunnon jäljennöksiä. Lautakunnan lukiasiantuntija tutustuu lausuntoihin jo ennen ylioppilastutkintolautakunnan valiokuntakäsittelyä.

Kun lukihäiriöinen kokelas ilmoittautuu tutkintoon myöhemmin uudelleen, lukion tulee toimittaa lausunto ilmoittautumistietojen yhteydessä lautakunnalle joka tutkintoa varten erikseen.

9. Lausunnoista korjaus- ja täydennyslomakkeeseen tehtävä merkintä

Lausunnoista on tehtävä merkintä asianomaisten kokelaiden kohdalle ylioppilastutkintolautakunnan lukioille lähettämään korjaus- ja täydennyslomakkeeseen. Tätä tarkoitusta varten lukion on syytä ottaa lausunnoista jäljennökset ennen kuin ne lähetetään lautakuntaan. Jäljennösten on oltava lukiossa myös siltä varalta, että kokelas osallistuu tutkintoon myöhemmin uudelleen.